…Capt. DILLON, who arrived at …k, in 8 Weeks from Falmouth, we have the …owing Advices.

…following Act for the better providing suitable …uarters for Officers and Soldiers upon His Majesty's Ser…ice in North-America," has passed both Houses of …Parliament and received the Royal Assent.

…VERAL Doubts have been entertained, whe…her Troops can be quartered otherwise than …n Barracks, in case Barracks have been provided fulfi…cient for the quartering of all the Officers and Soldiers …ithin any Town, Township, City, District or Place, …herein His Majesty's Dominions in North-America: And …whereas it may frequently happen, from the Situation …of such Barracks, that, if Troops should be quartered …therein, they would not be stationed where their Pre…sence may be necessary and required: Be it therefore …enacted by the King's most Excellent Majesty, by and …with the Advice and Consent of the Lords Spiritual and …Temporal, and Commons, in this present Parliament …assembled, and by the Authority of the same, That, in …all Cases, it shall and may be lawful for the Persons …who are or may be hereafter, authorised by Law, …within the Provinces within his Majesty's Dominions …in North-America, and they are hereby respectively au…thorised, empowered, and directed, on the Requisition …of the Officer who, for the Time being, has the Com…mand of His Majesty's Forces in North-America, to cause …the Officers and Soldiers in his Majesty's Service to be …billetted in such Manner as is now directed …by Law, where no Barracks are provided by the Colonies. …And be it further enacted by the Authority aforesaid, …That if it shall happen at any Time that any Officers or …Soldiers in His Majesty's Service shall remain within any …of the said Colonies without Quarters, for the Space of …twenty-four Hours after such Quarters shall have been …demanded, it shall and may be lawful for the Governor …of the Province to order and direct such and so many …uninhabited Houses, Out-houses, Barns, or other Build…ings, as he shall think necessary to be taken, (making …such Allowance for the same as the Circumstances of …the Case shall require) for the Quartering of such Of…ficers and Soldiers.

…that the Magistrates of …nce of the King of Prus…t was past the power of …at they had used every …fear of the exultations …been asserted in the …to land as English …without foundation, …received.

…town from Falmouth, …ion. William Tryon, …in the Mercury packet …e of his Majesty to come …affairs.

…his yesterday, Mr. Baker pre…mas and William Penn, own…rovince of Philadelphia, setting …pending in that House, for the …Government of Quebec, they …Property in the province of Phi…eatly injured, and therefore pray…might not pass into a Law, untill …by themselves, or Council, against …

…PORT, August 8.

…that Capt. William Bull, in a sloop …ast from the West-Indies, is arrived …N. Carolina, and that the inhabitants …ve bought his vessel, and are loading …ions for the support of the town of Boston; …to be supported at the expence of the last …the last drop of blood in North-America, …stand against the oppression and tyranny …corrupt, debauched and almost bankrupt …devoid of sense, humanity, and every …thing mere brutes; an adminis…t whom a common highway rob…

…the committees of the several …New-Jersey, held at New…came into a num…ted Messrs. …

…who were …

NEWBURYPORT, August 10.

At a Town meeting held Wednesday last, this Town Voted Two hundred Pounds Lawful Money, as a Donation for the industrious poor, who are suffering a political persecution in the Town of Boston.

SALEM, August 9. 1774.

The following is a List of the Gentlemen appointed, by his Majesty, Counsellors of this Province, agreeable to a late Act of Parliament, but in direct Violation of our Charter; viz.

Thomas Oliver, Esq; (Lieut. Governor.	Joseph Green, Esq;
Thomas Flucker, Esq;	James Boutineau, Esq;
Peter Oliver, Esq;	Andrew Oliver, Esq;
Foster Hutchinson, Esq;	Josiah Edson, Esq;
Tho. Hutchinson, Esq;	Richard Leechmere, Esq;
Harrison Gray, Esq;	Joshua Loring, Esq;
Samuel Danforth, Esq;	John Worthington, Esq;
John Erving, sen. Esq;	Timothy Paine, Esq;
James Russell, Esq;	William Pepperrell, Esq;
Timothy Ruggles, Esq;	Jeremiah Powell, Esq;
Joseph Lee, Esq;	Jonathan Simpson, Esq;
Isaac Winslow, Esq;	John Murray, Esq;
Israel Williams, Esq;	Daniel Leonard, Esq;
George Watson, Esq;	Thomas Palmer, Esq;
Nat. Ray Thomas, Esq;	Isaac Royal, Esq;
Tim. Woodbridge, Esq;	Robert Hooper, Esq;
William Vassall, Esq;	Abijah Willard, Esq;
William Brown, Esq;	John Erving, jun. Esq;

Province of *Massachusetts Bay*, } *Salem, August* 8. 1774.

HIS Majesty having been pleased to appoint the Hon. *Thomas Oliver* Esq; to be Lieutenant Governor of this Province, his Honor's Commission was accordingly this Day published in the

Some Days before the Departure of the Committee for the Congress, Mr. BOWDOIN sent them a Letter acquainting them, That he had had Hopes of proceeding with them to the Congress, but Mrs. BOWDOIN's ill State of Health, occasioned by a long continued Slow Fever, necessitated him to lay aside all Thoughts of it.

The Delagates from New Hampshire passed through this Town the next Day, on their Way to Philadelphia.

Last Wednesday Night, about 11 o'Clock, a Fire broke out in a large Brick Dwelling-House in Fish-Street, near the Old North-Meeting, occupied by Mr. Zachariah Morton, Baker, Mr. Murphy, and a Number of others; The Fire had got to such an Heighth, and raged so furiously, before the unhappy Tenants were apprized of it, that several of them with much difficulty, were obliged to escape out of the Chamber Windows, naked, and some much burnt.—Five others perished in the Flames, viz. Mrs. Ruth Murphy, Wife of Mr. Nicholas Murphy, Mariner, who it is said was far gone with Child; Ruth and Catherine Murphy, her Children; Mrs. Elly Flinn, Wife to Mr. Flinn, now in the Alms-House, and Mrs. Hannah Whittemore, Widow.—The Bodies were taken out of the Ruins next Day, burnt in a very shocking Manner.—The House was soon consumed with most of the Furniture; but it being a very calm Night, and a plentiful Supply of Water, together with the Dexterity of the Inhabitants in the Management of the Engines, &c. the Fire was under Providence, prevented spreading any further.

A Jury of Inquest was summoned on the Bodies, who brought in a Verdict, That said Persons being in a Dwelling-House which accidentally took Fire, and they not having it in their Power to escape, were suffocated and burned, and by that Means came to their Deaths.

We are told that Earl Percy generously offered the Service of a Number of Soldiery who could be confided in, if the Inhabitants thought proper; but the Regulations observed in this Town, in Time of Fire, rendered their Assistance unnecessary.

We hear that his Excellency Governor Gage desired the Attendance of the Selectmen of this Town at the Province House [illegible]

Excellency told them he was ready on Application to give Liberty for a Town's Meeting, if he should judge it expedient; and being told, that the Provincial Law had been the Rule of their Conduct in these Matters, He said he was determined to carry the Acts of Parliament into Execution, and they must be answerable for any bad Consequences.

Saturday last 376 Sheep were received from our sympathising Brethren of Lebanon, in the Colony of Connecticut, as a Donation for the Benefit of the industrious Poor in this distressed Town.

Extract of a Letter from a principal Manufacturer in England, to a House in this Town.

"I understand no Goods can be ship'd you from London, as your Port is shut by the late cruel Proceedings of Government, which I hope they'll soon repent of. Your Goods, and a Quantity more made and finish'd for your Markets, are now laying in my Warehouses, until our wise and gracious Governors shall think proper to unshackle Trade with you, which I hope will be soon, or the Consequence must be very disagreeable and distressing to Thousands."

Extract of a Letter from a Gentleman of eminence in London, to his Friend in this Town.

"The late Proceedings relative to the faithful Province of Massachusetts, and the Town of Boston, give general Dissatisfaction, and make many very uneasy, who sincerely wish you the Wisdom and Fortitude your disagreeable Situation requires: Oh for an Increase of the stern Virtue of the noble Ancestors of the present Race of New-England Men, whose Fortitude dar'd every Thing rather than submit to Slavery. I send you this per the Packet, the Barbarity of the Times not admitting the usual Conveyances."

Extract of a Letter from one of the first and best of Men in a distant Colony, to his Friend at Boston.

"You and your worthy fellow-sufferers would receive [illegible], with [illegible] consider [illegible] appened [illegible] know- [illegible] a fur- [illegible] are, *if* [illegible] y in the *ry thing* [illegible] beloved [illegible] y heart [illegible] ay con- [illegible] liberty, [illegible] be very [illegible]. It is [illegible] sentment [illegible] By an [illegible] and, oc- [illegible] ico and [illegible] ne, cat- [illegible] F in the [illegible] would [illegible] age and [illegible] or exp- [illegible] d, Cap- [illegible] of his [illegible] Deacon [illegible] Heywood of the same Place, long since deceased.—He was a kind *Husband*, a tender *Father*, a generous and sincere *Friend*.—He was careful to maintain the Worship of GOD in his *Family*, and discovered, *even to the last*, an Attachment to the Religion which he profess'd.—He was one of those noble *Heroes* who steadily opposed the Steps that were taken in that Place to overthrow the *Order* of the *Churches* in this Land, and was taken away before the Cause was finally and meanly given up.—The Words of the Evangelical Prophet are abundantly verified—*The Righteous is taken away from the Evil to come.* Isaiah lvii. 1.—May Heaven support the *Widow*, and the *Fatherless Children*.

AN EXTRAORDINARY INSTANCE OF GRATITUDE

Messieurs EDES & GILL,

IN your Paper of 1st of July, we are informed of the generous Intention of the Town of Cambridge to contribute towards the Relief of their distressed Brethren in the Town of Boston; and that they had chosen a Committee to receive the Donations that might be made for that Purpose. This Act was conformable to the general Disposition of the worthy Inhabitants of that respectable Town. *But it was opposed!* By whom you will ask. I answer, by that Pattern of Justice, *Gratitude* and publick Spirit, John Dennie, Esq; one of Mr. Hutchinson's favorite Justices; who lately having suffered by Fire, had such a Sum collected for him (or single, no Way remarkably deserving Individual) in the Town of Boston, that if the whole Town of Cambridge will return half as much to the Hundreds suffering here it will be accounted much more than we can reasonably expect from them.

Gratiam referendam non habito respectu ad pretii magnitudinem, sed ad ingenium et voluntatem conferentis.

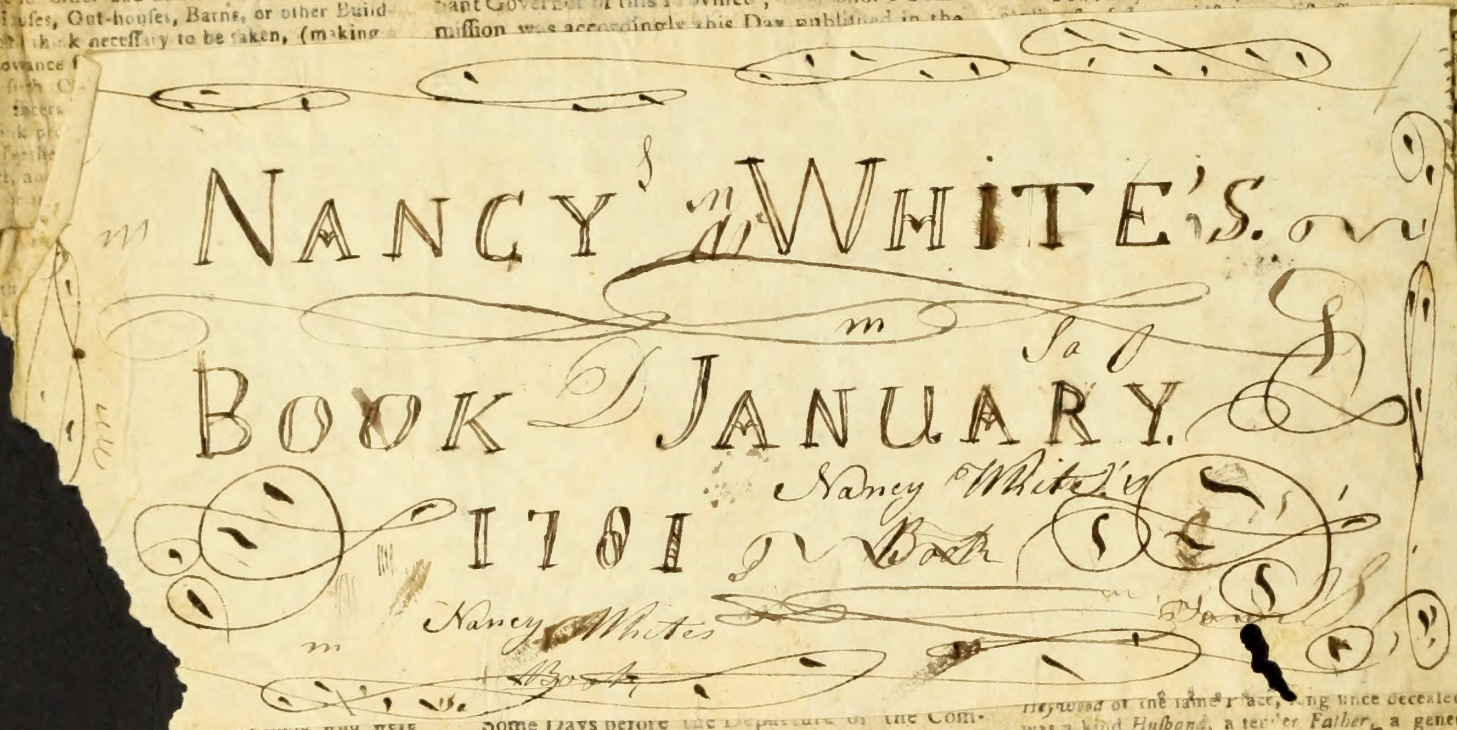
DIOTOGENES PYTHAGORAS

Two Laws, says Seneca, bind Givers and Receivers; the first to forget instantly their having bestowed; the latter, *never to forget* their having received.

A CONTRIBUTOR.

BARLEY.

A Quantity is wanted to be deliv[ered] at Boston or Salem, for which the Cash will be p[aid] Enquire at Store No. 20, on the [illegible]



The Numeration Table

9 of Millions	8 of Millions	7 of Millions	6 of Hundreds of Thousands	5 of Tens of Thousands	4 of Thousands	3 of Hundreds	2 of Tens	1 of Units
9	9	0	7	6	4	3	2	1
	9	0	7	6	5	4	3	2
		9	0	7	6	5	4	3
			9	8	7	6	5	4
				9	0	7	6	5
					9	0	7	6
						9	0	7
							9	0
								9

Plain Addition

4	7	6	5	4	3	2	
6	4	7	2	5	4	3	
5	6	8	7	4	6	7	
0	7	6	4	7	0	4	
2	5	6	9	0	2	2	6
2	0	9	2	4	7	9	4
2	5	6	9	0	2	2	6

6	7	0	4	2	3	2	1	
4	6	7	0	4	2	3	4	
6	7	0	4	5	4	2	1	
7	0	4	6	7	0	4	6	
2	6	1	7	3	8	8	2	2
1	9	3	8	9	6	5	0	1
2	6	1	7	3	8	8	2	2

5	4	2	3	0	7	0	4	6	4
4	7	0	4	6	0	7	6	0	7
7	4	6	7	0	4	0	7	4	6
0	7	4	6	7	8	7	4	6	0
2	6	4	2	3	2	0	2	3	6	5
2	0	9	9	9	3	2	3	9	0	1
2	6	4	2	3	2	0	2	3	6	5

7	4	6	7	0	7	6	4	2	
3	4	5	4	6	0	7	5	4	
4	7	4	7	6	7	8	7	5	
6	7	8	7	6	4	7	8	7	
2	2	4	3	7	8	9	0	5	8
1	4	9	9	0	0	1	4	1	6
2	2	4	3	7	8	9	0	5	8

Addition of Money

Note 4 Farthings make one Penny 12 Pence one Shilling 20 Shill[ings] one Pou[nd]

£	s	d	q
2	4	7	6
0	7	4	0
9	0	6	4
4	7	8	9
2	5	8	7	9	"	9	"	2	"	1
---	---	---	---	---	---	---	---	---	---	---
2	3	4	0	2	"	17	"	5	"	3
2	5	8	7	9	"	9	"	2	"	1

£	s	d	q
6	7	8	4
7	0	4	6
0	4	7	0
7	0	4	6
6	4	7	0
3	7	4	3	6	"	6	"	3	"	2
---	---	---	---	---	---	---	---	---	---	---
3	0	6	5	1	"	7	"	4	"	0
3	7	4	3	6	"	6	"	3	"	2

£	s	d	q
4	6	7	4
6	7	4	6
5	4	6	3
6	7	4	0
1	3	6	3	3	"	18	"	7	"	0
---	---	---	---	---	---	---	---	---	---	---
1	8	9	5	9	"	6	"	2	"	3
2	3	6	3	3	"	18	"	7	"	0

£	s	d	q
8	0	7	6
7	0	4	6
6	7	0	4
7	0	7	0
8	9	4	7
4	0	2	2	5	"	13	"	7	"	3
---	---	---	---	---	---	---	---	---	---	---
3	1	4	5	8	"	1	"	11	"	0
4	0	2	2	5	"	13	"	7	"	3

£	s	d	q
6	7	0	4
4	5	4	2
6	7	4	1
4	5	4	1
2	2	6	2	11	"	6
---	---	---	---	---	---	---
1	5	8	4	0	"	6
2	2	6	2	11	"	6

£	s	d	q
6	4	4	1
4	6	7	1
6	7	8	1
6	0	7	1
8	7	8	1
3	3	5	8	6	"	3
---	---	---	---	---	---	---
2	7	1	3	9	"	1
3	3	5	8	6	"	3

Of Cloth Measure

Note 4 ~~Quarters~~ Nails make one Quarter 4 Quarters one Yard,
5 Quarters one Ell English, 3 Quarters one Ell Flemish.

Yards	Qrs	Nls
147646	2	2
787467	3	3
876478	2	2
674676	2	2
2486269	3	1
2338623	0	3
2486269	3	1

Yards	Qrs	Nls
876471	2	2
98798	1	2
678974	2	3
987641	1	1
3531081	0	0
2654602	2	2
3531081	0	0

Yards	Qrs	Nls
9876542	2	2
8767681	1	1
9876543	3	3
8763331	3	3
37284111	3	1
2740757	0	3
37284111	3	1

Ells English	Qrs	Nls
9876543	4	2
8765470	3	2
7847670	2	1
9907490	4	2
36477199	4	3
26600656	0	1
36477199	4	3

Ells Flem	Qrs	Nls
876543421	1	2
76787467	2	1
69876947	2	1
76787648	2	3
311064063	2	3
223452061	1	1
311064063	2	3

Yds	Qrs	Nls
746	2	2
678	2	1
787	1	3
876	3	2
3689	2	0
2342	3	2
3089	2	0

Of Troy Weight

NB 24 Grains make one Penny-weight 20 Penny-wt one Ounce 12 Oz. one Pound

Lbs	Oz.	Dwt	Grs
9876	11	19	22
8767	10	10	21
976	11	17	19
78	10	18	18
10	9	13	20
823	9	14	16
400	9	13	20

Lbs	Oz.	Dwt	Grains
767470471	9	18	21
67876478	7	14	22
78767467	8	14	23
67478976	7	19	19
2908707710	8	13	
2441229130	9	16	
2908707710	8	13	

Of Avoirdupoise Weight

Table.

16 Drams make one Ounce
16 Ounces —— 1 Pound
28 Pounds —— 1 Quarter
4 Quarters —— 1 Hundred
20 Hundreds —— 1 Ton.

Tons	C	Qrs	Lbs	Oz	Drams
17	8	4	6	2	2	26	14	12
6	8	7	4	7	1	8	3	27	15	13
7	8	6	7	8	1	4	2	17	13	14
8	7	4	6	7	1	4	3	18	14	15
25	2	7	4	0	11	1	2	11	6
23	4	8	9	4	8	2	3	12	10
25	2	7	4	0	11	1	2	11	6

Tons	C	Qrs	Lbs	Oz	D
6	7	4	6	10	3	24	12	14
7	8	7	4	17	2	19	14	13
6	7	4	7	16	2	18	15	14
7	5	3	4	15	1	17	11	11
28	9	0	4	8	2	25	7	4
22	1	5	7	9	3	0	10	6
28	9	0	4	8	2	25	7	4

Apothecaries Weight

Table.

20 Grains 1 Scruple
3 Scruple 1 Dram.
8 Drams 1 Ounce.
12 Ounces 1 Pound.

lb	Oz	D	S	Grains
6	7	0	5	8	4	2	17
7	8	7	6	4	6	1	16
4	7	8	7	5	7	2	14
7	8	4	6	4	5	7	17
27	2	9	6	0	1	0	4
20	3	10	3	4	0	7
27	2	9	6	0	1	0	4

lb	Oz	D	S	Grains
7	0	4	6	7	10	6	2	18
8	7	6	4	7	11	7	1	19
7	6	4	7	8	10	8	2	14
6	7	8	4	7	11	1	2	15
310	4	22	9	1	1	6
231	9	14	10	2	1	8
310	4	22	9	1	1	6

lb	Oz	D	S	Grains
6	7	8	4	1	10
7	8	7	9	4	1	19
6	7	8	7	7	1	18
4	6	7	8	4	1	17
29	12	9	7	1	12
22	3	4	2	0	2	14
29	12	9	7	1	12

lb	Oz	D	S	Grains
9	0	7	6	4	2	19
7	6	7	8	7	2	16
7	8	7	6	4	1	17
6	7	6	7	8	2	16
6	7	8	6	5	4	1	18
7	8	7	6	4	5	1	16
6	7	6	4	7	4	2	14
53	6	2	7	5	11	0	1	16
43	7	5	0	8	1	3	1	17
53	6	2	7	5	11	0	1	16

Dry Measure.

Table
2 Pints – 1 Quart
2 Quarts – 1 Pottle
2 Pottles – 1 Gallon
2 Gallons – 1 Peck
4 Pecks – 1 Bushel
8 Bushels – 1 Quarter
4 Quarters 1 Chaldron

C	Qrs	Bs	Pk	Gls
6	7	0	4 =	2 = 6 = 8 = 1
8	7	6	4 =	3 = 7 = 2 = 1
9	8	7	6 =	4 = 4 = 3 = 1
7	8	7	6 =	3 = 4 = 2 = 1
6	7	8	7 =	2 = 6 = 2 = 1
4	0	0	0 =	1 = 6 = 2 = 1
3	3	3	0 =	2 = 7 = 3 = 0
4	0	0	9 =	1 = 6 = 2 = 1

Chal	Qrs	Bus	Pk	Gal	Qt	2	Pt
9	0	7	6 4 =	3 =	7 =	2 =	0 = 1 = 0 = 1
8	7	6	4 7 =	2 =	6 =	3 =	1 = 1 = 1 = 0
6	0	7	6 8 =	3 =	7 =	2 =	0 = 0 = 0 = 1
7	8	7	6 4 =	2 =	4 =	3 =	1 = 1 = 1 = 0
6	7	8	7 6 =	1 =	5 =	2 =	0 = 1 = 0 = 1
8	7	6	7 0 =	2 =	7 =	3 =	1 = 0 = 1 = 0
7	6	4	0 7 =	3 =	6 =	2 =	1 = 1 = 0 = 1
4	5	4	6 7 =	2 =	4 =	3 =	1 = 0 = 1 = 0
5	4	6	7 6 =	1 =	5 =	2 =	0 = 1 = 0 = 1

6	6	6	1	3	3 =	2 =	1 =	2 =	1 = 1 = 0 = 1
3	6	7	3	6	8 =	2 =	2 =	0 =	1 = 0 = 0 = 0
6	6	6	1	3	3 =	2 =	1 =	2 =	1 = 1 = 0 = 1

Wine Measure.

Table
2 Pints – 1 Quart
4 Quarts – 1 Gallon
63 Gallons – 1 Hogshead
4 Hogsheads – 1 Ton.

Ton	Hhds	Gal	Qt	Pt
6	7	0	9 7 =	2 = 6 0 = 1 = 1
7	0	9	4 7 =	3 = 4 7 = 0 = 1
6	7	8	9 8 =	2 = 5 9 = 1 = 1
7	8	6	7 6 =	3 = 4 0 = 1 = 1
8	7	6	5 4 =	3 = 4 9 = 0 = 0
7	6	4	7 6 =	2 = 6 2 = 1 = 1
3	6	9	8 9	8 = 0 = 2 6 = 1 = 1
3	0	2	0 0	0 = 1 = 2 0 = 1 = 0
3	6	9	8 9	8 = 0 = 2 6 = 1 = 1

Ton	Hhds	Gal	Qt	Pt
7	4	6	7 8 4	6 7 = 1 = 4 7 = 1 = 1
6	7	8	9 8 7	6 0 = 1 = 5 4 = 0 = 0
8	9	8	7 6 7	8 7 = 3 = 6 1 = 1 = 1
9	8	7	6 5 4	7 8 = 2 = 5 0 = 1 = 1
6	7	4	7 8 9	8 9 = 3 = 4 7 = 1 = 1
3	9	8	6 9	8 4 9 2 = 2 = 1 7 = 2 = 0
3	2	4	0 2	0 0 2 5 = 0 = 3 2 = 0 = 1
3	9	8	6 9	8 4 9 2 = 2 = 1 7 = 2 = 0

Time

Note

60 Seconds — 1 Minute
60 Minutes — 1 Hour
24 Hours — 1 Day
365 Days — 1 Year.

Year	Days	H	M	Sec
6704	222	11	14	39
7670	187	21	58	37
8764	378	22	47	48
9876	209	19	59	59
33106	54	4	1	23
26321	196	16	46	44
33106	54	4	1	23

Year	D	H	M	S
78946	347	21	46	54
67898	123	22	57	56
70476	347	21	40	49
67847	270	19	49	54
293170	3	14	23	33
214223	20	16	36	39
293170	3	14	23	33

Year	Days	H	M	Sec
467046	347	22	50	59
987678	364	21	47	48
898760	287	19	30	39
679876	290	22	29	50
3034171	204	14	55	24
2566324	221	15	56	25
3034171	204	14	55	24

Long Measure

Table

3 Barley-corns — 1 Inch
12 Inches — 1 Foot
3 Feet — 1 Yard
5½ Yards — 1 Pole
40 Poles — 1 Furlong
8 Furlongs — 1 Mile
3 Miles — 1 League.

L	M	F	f	a
67	1	7	36	3
98	2	6	37	4
78	1	4	38	5
98	2	7	39	4
87	2	6	34	4
98	0	7	33	5
67	2	6	32	4
598	1	1	14	½
530	2	1	17	4
598	1	1	14	½

Lea	Mil	Fur	Pol	Yd	Fe	In	Ba
674	2	6	37	4	2	11	1
987	2	5	19	5	1	10	1
876	2	6	20	4	2	11	1
967	1	4	39	3	1	10	
678	1	7	30	4	2	11	
4186	0	0	5	2	0	6	
3511	0	1	7	2½	0	7	
4186	0	0	5	2	0	6	

Lea	M	F	f	y	F	I
670	1	4	34	5	1	0
876	1	5	37	4	2	7
987	1	6	30	3	1	9
987						
876	2	7	35	4	2	8
987	2	6	37	5	2	9
4407	2	0	25	2	2	6
3729	0	3	30	2½	0	10
4407	2	0	25	2	2	6

Subtraction

This Rule teaches how to take a lesser Sum from a greater and to discover the odds.

From 7427632109
Take 6748763147
0678868863
7427632109

From 9846741023102 1
6987041234560 7
2858899708541 4
9846741023102 1

Of Money

£ s d
From 947 - 10 - 11
Take 784 - 16 - 04
162 - 14 - 7
947 - 10 - 11

£ s d q
7467 - 17 - 7 - 1
6787 - 19 - 8 - 2
0679 - 17 - 10 - 3
7467 - 17 - 7 - 1

£ s d q
7467896 7 - 11 - 4 - 1
6876987 8 - 14 - 6 - 2
0590908 89 - 16 - 9 - 3
7467896 78 - 11 - 4 - 1

£ s d
9876 5 - 12 - 4 2/4
8798 7 - 16 - 6 3/4
1077 7 - 15 - 9 3/4
9876 5 - 12 - 4 2/4

Of Cloth Measure

Ydd Qrt Nls
0412 3 - 2 - 1
1787 6 - 2 - 2
0916 - 3 - 3
1123 - 2 - 1

Ells Eng Qrt Nls
7847 8 - 1 - 1
6784 9 - 1 - 2
1062 8 - 4 - 3
7011 8 - 1 - 1

Ells Flem Qrt Nls
6478 98 - 1 - 1
1789 87 - 2 - 2
1689 11 - 1 - 3
6478 98 - 1 - 1

Of Troy Weight

lbs Oz Dwt Grs
6410 - 10 - 16 - 18
7786 - 10 - 17 - 19
1623 - 11 - 12 - 23
6410 - 10 - 16 - 18

lbs Oz Dwt Grs
8767 8 - 8 - 14 - 17
6787 8 - 9 - 15 - 18
1979 9 - 10 - 18 - 23
8767 8 - 8 - 14 - 17

Avoirdupoise Weight.

Tons	Qrs	Lbs	Ozs	Drs
94764	14	2	17	11	11
87894	16	3	18	12	12
06869	17	2	26	15	15
94764	14	2	17	11	11

T	C	Q	Lbs	Ozs
874	11	1	14	8
678	14	1	17	9
105	16	3	24	15
874	11	1	14	8

Apothecaries Weight.

lbs	Ozs	Dr	S	Grs
87647	8	2	4	1	12
47879	8	7	5	1	14
39679	6	6	2	18
87647	8	2	4	1	12

lbs	Ozs	Dr	S	Grains
98123	3	5	0	13
87948	4	6	1	16
10179	10	6	1	17
98123	3	5	0	16

Dry Measure

Chal	Qrs	Bs	Pks	Gls	Pts	Qts	Pint
64211	1	5	1	0	1	0	1
47872	6	1	1	1	1	0
16332	6	3	0	1	0	1
64211	1	5	1	0	4	0	1

Q	Qrs	Bs	Pks	Gls	Pts	Qts
47	0	3	1	0	0	0	0
27	1	4	1	1	1	1	1
19	2	6	3	0	0	0	1
47	0	3	1	0	0	0	0

Wine Measure

Tons	Hhds	Gal	Qts
87678	1	47	1	1
47828	2	54	1	1
39779	2	56	0	0
87678	1	47	1	1

Tons	Hhds	Gal	Qts
94678	3	47	0	0
87489	3	58	1	1
06188	3	51	0	1
94678	3	47	0	0

Time

Years	Days	H	M	Sec
874	142	21	42	37
847	234	14	57	48
026	272	6	44	49
874	142	21	42	37

If you are 9 Years Old this Year what Year was you born in!

1781
9
1772

Long Measure

L	M	Fur	Pol	Yds	Ft	In	Bs
610	0	4	28	1	2	1
471	1	5	37	2	2	2
138	1	0	30	2½	2	2
610	0	4	28	1	2	1

The Multiplication Table

1	2	3	4	5	6	7	8	9
2	4	6	8	10	12	14	16	18
3		9	12	15	18	21	24	27
4			16	20	24	28	32	36
5				25	30	35	40	45
6					36	42	48	54
7						49	56	63
8							64	72
9								81

6746789 87
432
13493579 74
2024036961
86987859 48
2914613223 14

4789678
32
9579356
14369034
15326967 4

Multiplicand
67846782
Multiplier 2
135693564

787467876 7
765
3937339 3835
4724807260 2
5512275136 9
6024129256 755

654790764 78
9876
392879258868
45835913534 6
5238300118 24
5893188883 02
5467792600967 28

6789876789
789
61086211 01
5431877312
4752892523
5357189116521

746787676 87
9867
52275137509
4807260122
4430129 6
2109890083
7858549257329

Compound Multiplication

Rule: Multiply the Price by the Quantity, and that Product is the Answer.

What comes 4 Bushels of Oats to at £ 14 ~ 14 ~ 8 ₰ Bushel?

£ 58 ~ 18 ~ 8

So what comes 7 Yards of Holland at £ 27 ~ 17 ~ 9 ₰ Yard?

£ 195 ~ 4 ~ 3

What comes 8 Hours to at £ 270 ~ 19 ~ 9 ~ 2/8 ₰ Hour?

£ 191 ~ 18 ~ 4 ~ 1

So what comes 9 Hundred of Sugar at

What comes 11 Hogsheads of Wine to at £ 48 ~ 15 ~ 11 ~ 1/9 per Hhd?

So what comes 12 Yards of Cloth at £ 347 ~ 17 ~ 9 ~ 9/12 ₰ Yard?

What comes 11 Yards of Silk to at £ 378 ~ 19 ~ 8 ~ 8/11 ₰ Yard?

£ 4113 ~ 16 ~ 4

What comes 12 pair Silk Stockings to at £ 272 ~ 16 ~ 4/12 ₰ pair?

£ 3273 ~ 16 ~ 0

Division

Divisor | Dividend | Quotient

9 | 9767876 | 1085319 - 5
9
11111
76
Proof 9767876
72
47
45
28
27
17
9
86
81
5

7 | 67878876 | 9697554
63
48
42
67
63
41
42
4

74 | 6787678876 | 91725338
666
127
74
536
518
187
148
398
370
287
222
656
592
64

7876 | 6787678876 | 861818
63018
18687
17256
14318
13776
6427
6312
1196
876
320

6746 | 6478767896 | 960313
60714
4036
4046
26098
20238
5840

67871 | 6470767 | 9544
61083
37046
33935
31127
27148
3969

Reduction

In £747 10 how many Shillings?

20
20)14950(747
140
95
80
150
140
10

In £4742 12 how many Shillings?

20
20)94852(4742
80
148
140
85
80
52
12

In £4859 2 6 Old Sterling how much is it Money

7=10)4859 2 6(£647 17 8 Answ.
28
19 7 12
13 9 2
18 6 0
10 0 0
6 19
7 20
14 9 0
12 6 0
15 9 0
14 0
1 9 6
1 8 0 0
18 0 0
13 8 0 0
12 6 0 0
12 0 0
12
2 4 0 0
2 4 0
14 4 0 0
14 4 0

£ 647
4859 2 6
2
10 5 0 647
1 7 6
21
60
118
105
13
20
17 2 6 5 17
1 5
10 5
12
12 0
8

In £647 Sterling how many Farthings?

20
12940
12
155280
12940
12)155280(12940(6462 14 6
12
35
24
111
108
30
24
65
60
54
48
6
2

In £6462 14 6 how many Pence?

20
129254
12
1551054
12
35
24
111
108
30
24
65
60
54
48
6

In 4764 1 2 how many Yards?

4
19057
4
4)76229(19057(4764 1 1
4
36
36
2
0
22
20
2
8
1

In 4764 1 2 how many Farthings?

20
95340
12
1144080
95340
1144080
4)4576320(1144080(95340(4764
4
4
07
4
36
36
05
4
14
12
20
20
0

In 4764 1 2 how many Old Sterling

£ s d
647 17 8½
3 2 3 18 10
4 5 3 5 3 8
4859 2 6 Answ.

In 764 ℔ 7 how many Grains?

12
764
7
5348
20
106960
24
2567040
24
10268160
24
246435840

In 6746 Ells how many Guineas?

4 4 8 1 4 6
2 8 3 3 4 1 9 1517
1 2 6
3 6
1 9 6
1 6 6

In 674 Yards of Cloth how many Ells English?

1=1 6 7 4
4 5
2 2 5 2 9 6 5 3 9
1 9
1 7
2 3
1

In 764 ℔ 7 how many Grains?

12
9171
764
55047
60
3302820
24
79267680

24)446500800(18354120(9771(647 7

200 | 35 | 176 | 85
192 | 20 | 77 | 42
85 | 154 | 46 | 430
42 | 140 | 91 | 120
430 | 142 | 85 | 100
120 | 140 | 96
100 | 120 | 48
96 | 120 | 48
48 | 0
48
0

In 267 ℔ 11 ℥ 1 ʒ how many Grains?

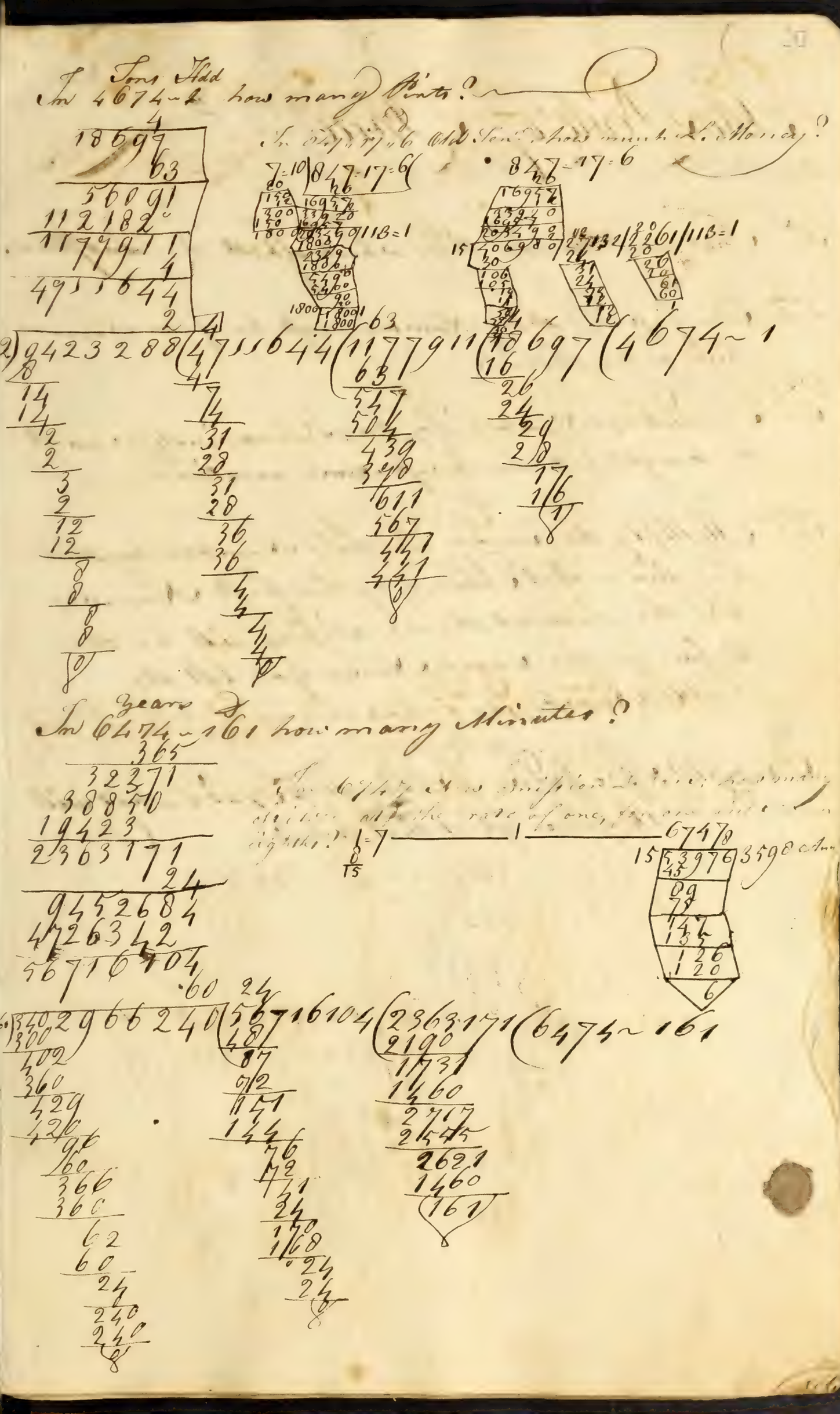
20
9371
4
37485
28
299880
7481
10473480
16
62840880
10473480
16757440
16
500544640
167544640

16)2605190040(16757440(20104734037485(4(9371(467 11 1

16 | 16 | 20 | 4 | 20
108 | 96 | 84 | 36 | 80
96 | 117 | 204 | 14 | 135
121 | 112 | 196 | 12 | 120
112 | 56 | 113 | 20 | 151
96 | 48 | 112 | 20 | 140
168 | 80 | 14 | 5 | 11
160 | 64 | 140 | 4
8 | 64 | 140 | 1
64 | 64 | 0
0

Tons Add
In 4674~2 how many Pints?

In 6474~161 how many Minutes?



The Rule of Three

1st That must be the third which asketh the Question.

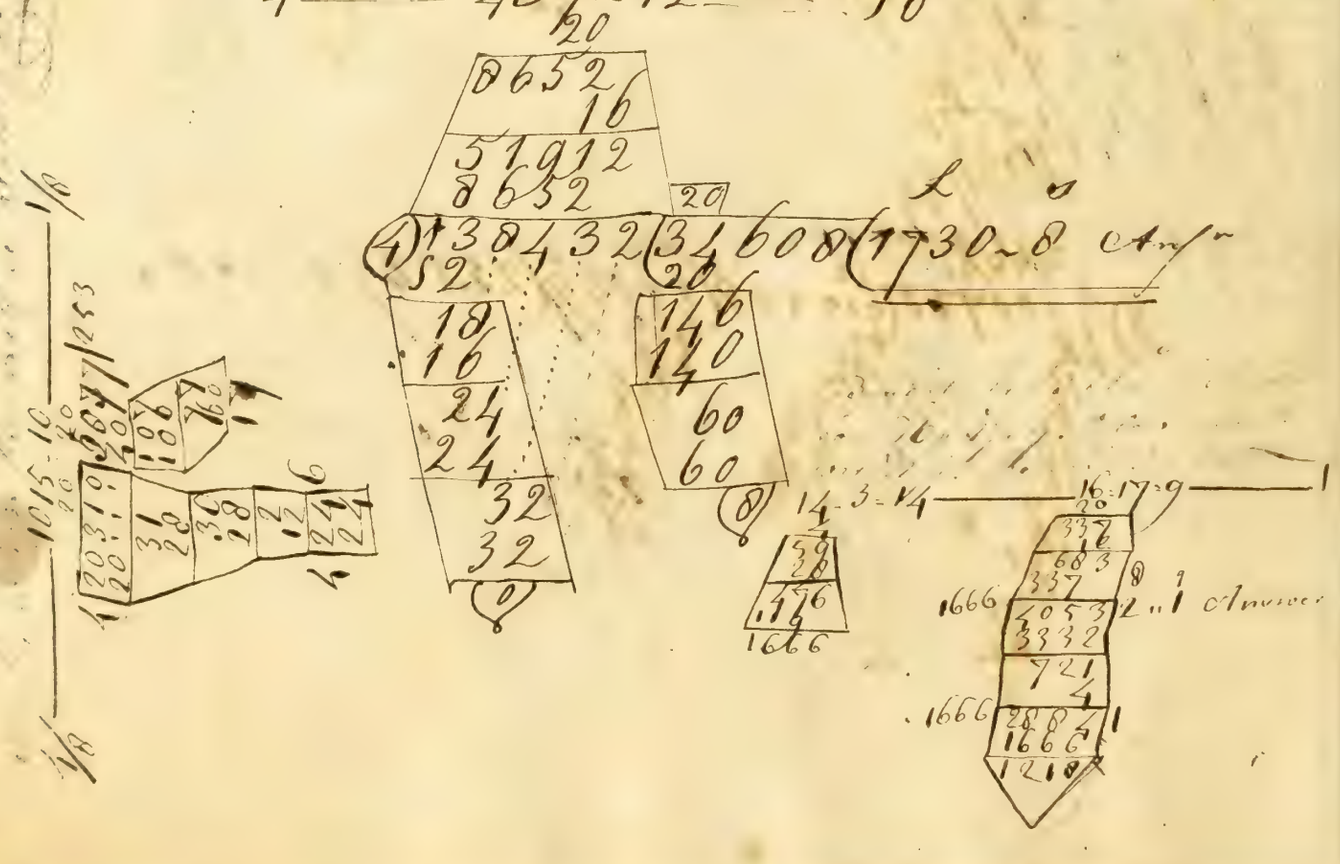
2dly The first and third Number must be of one Name or Kind or be reduced.

3dly The middle Number if of divers Denominations must be brought into the lowest Name mentioned.

4thly Multiply the second and third Number together and divide that Product by the first Number and the Quotient thence arising will be the Answer in the same Name you left the middle Number.

Example, If 4 yards of Silk cost £ 437 - 12 what will 16 yards cost at that Rate?

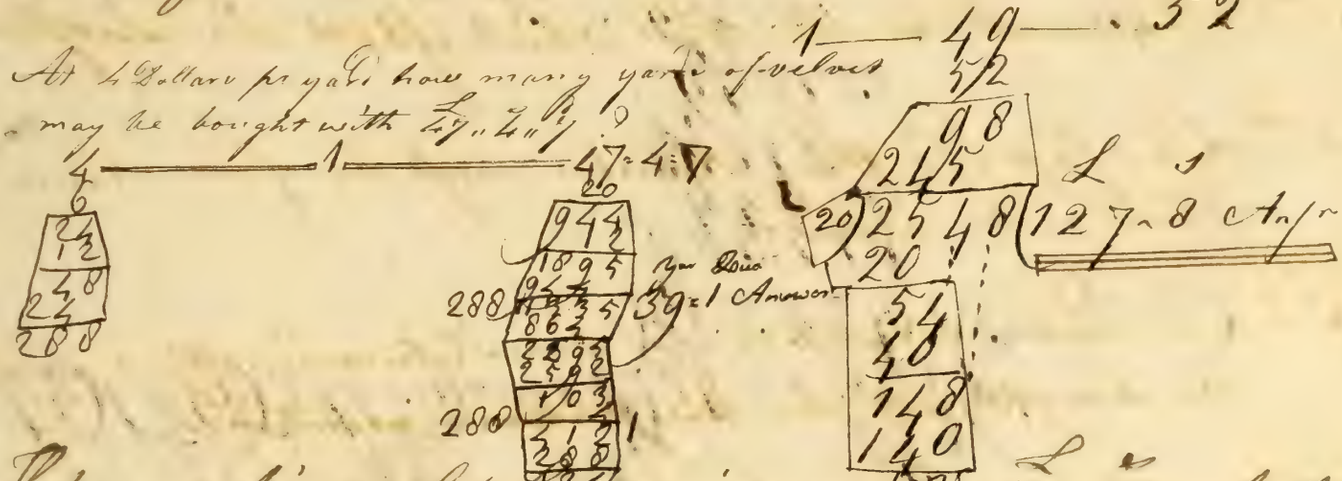
4 —— 437 - 12 —— 16



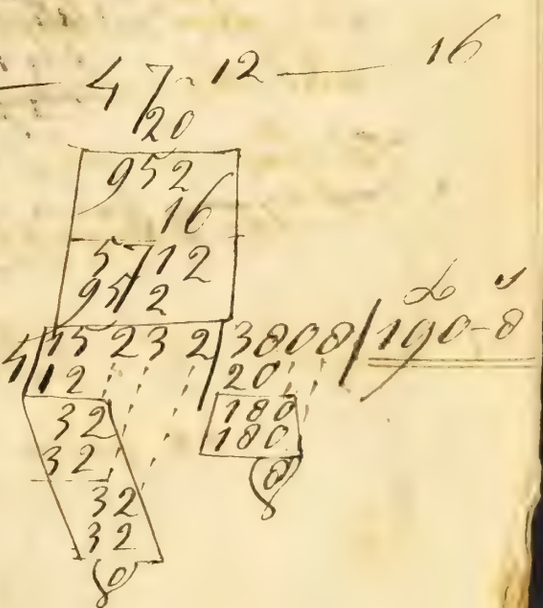
Continued

If a Maids pay is £9 a Week, what will 52 Weeks or a Year come to?

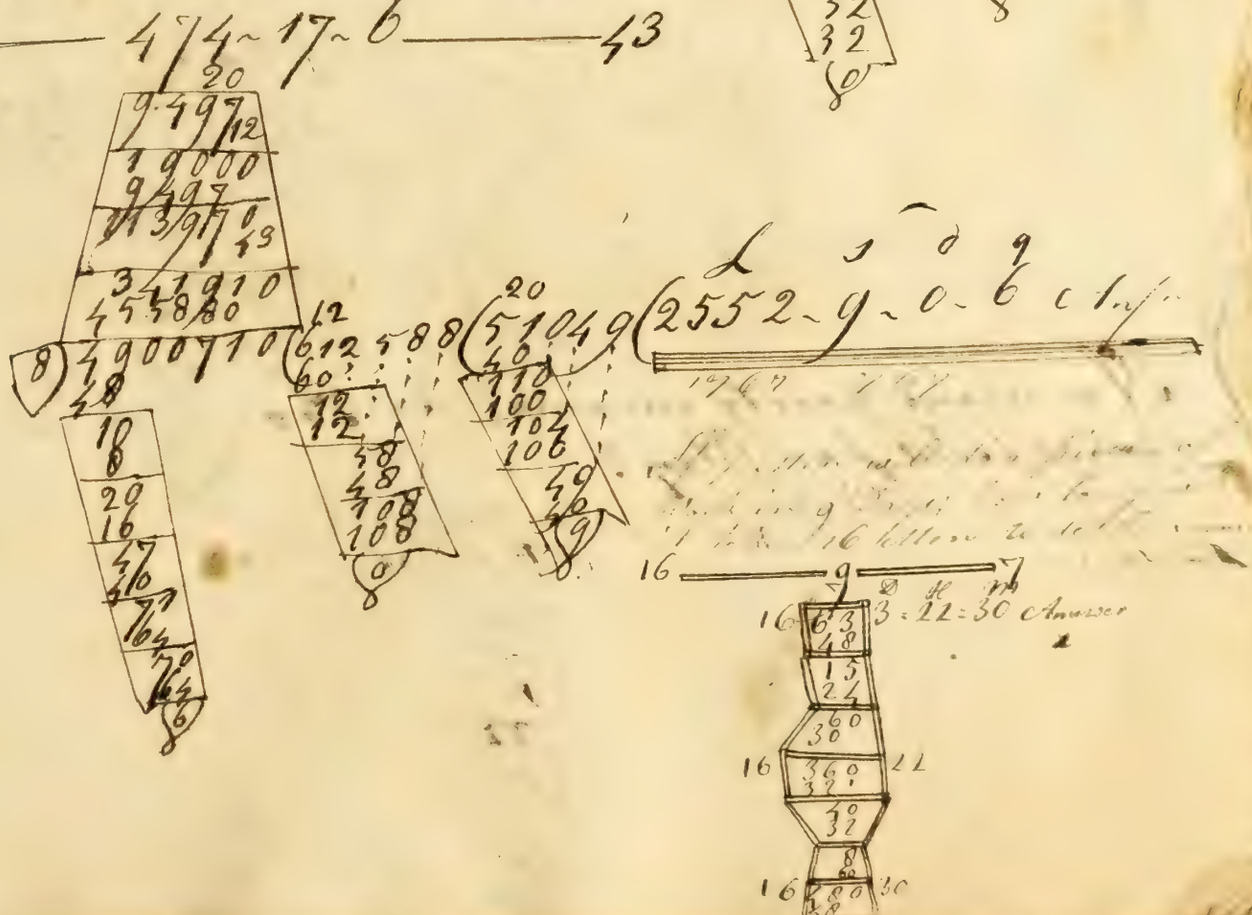
1 — 49 — 52



If the making of 4 Gowns is worth £47 12 what will the making of 16 Gowns come to?



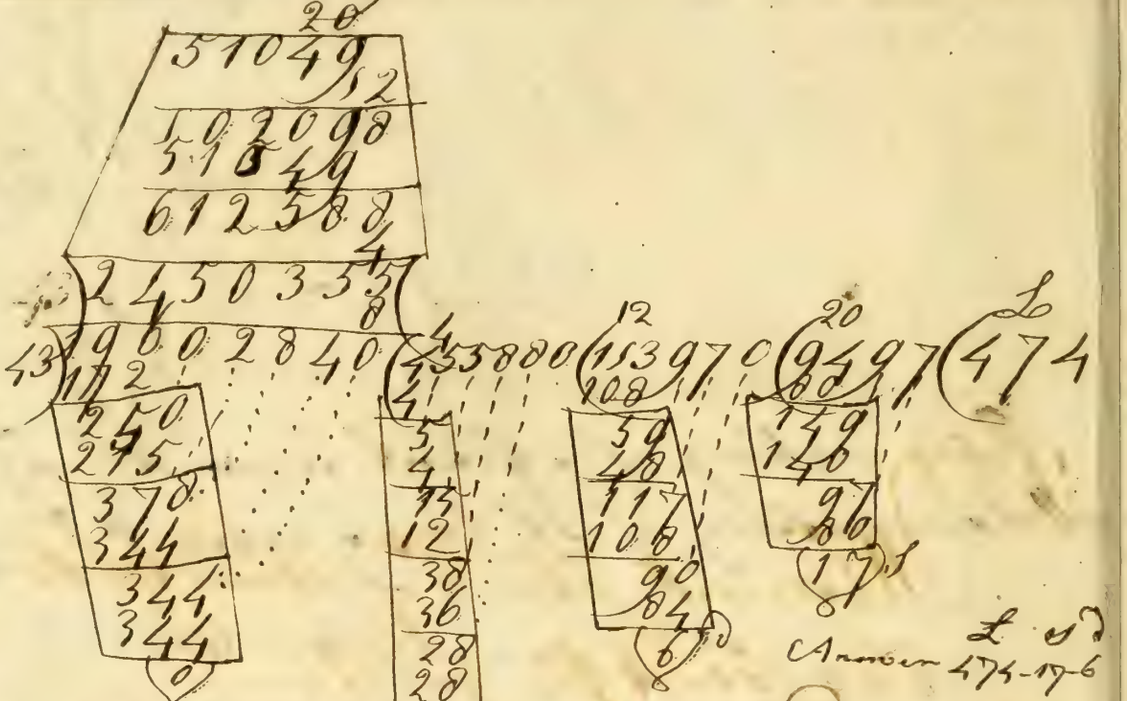
If 8 yards of Cloth cost £74 17 6 what will 43 yards cost?



Continued

What will 8 yards of Broad Cloth cost if 43 yards cost 2552-9-0-3?

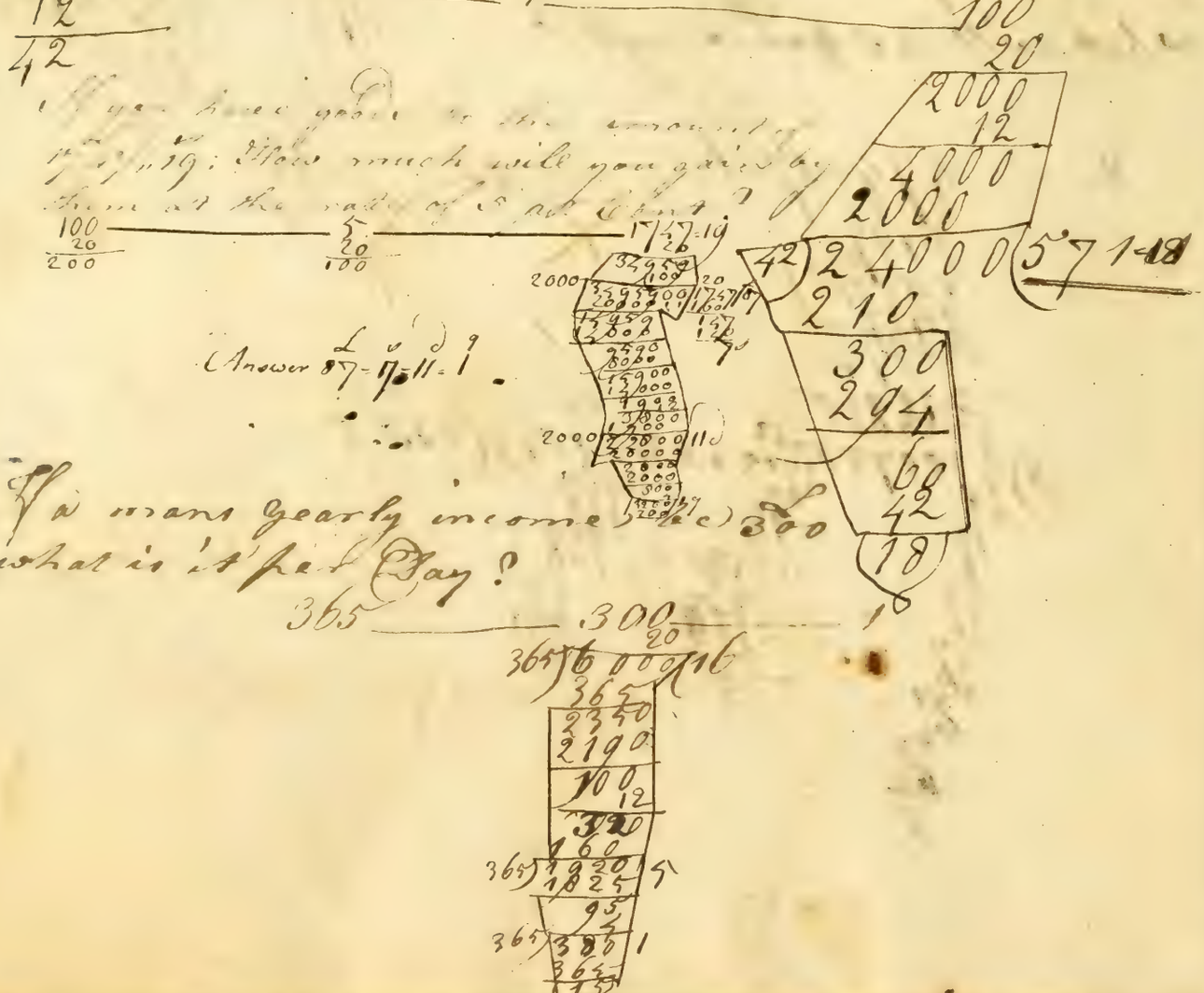
43 ——— 2552-9-0-3 ——— 8



Answer £474-17-6

How many yards of Lace for 100 at 3s 6 per yard?

3-6 ——— 1 ——— 100



Answer £57-1-8

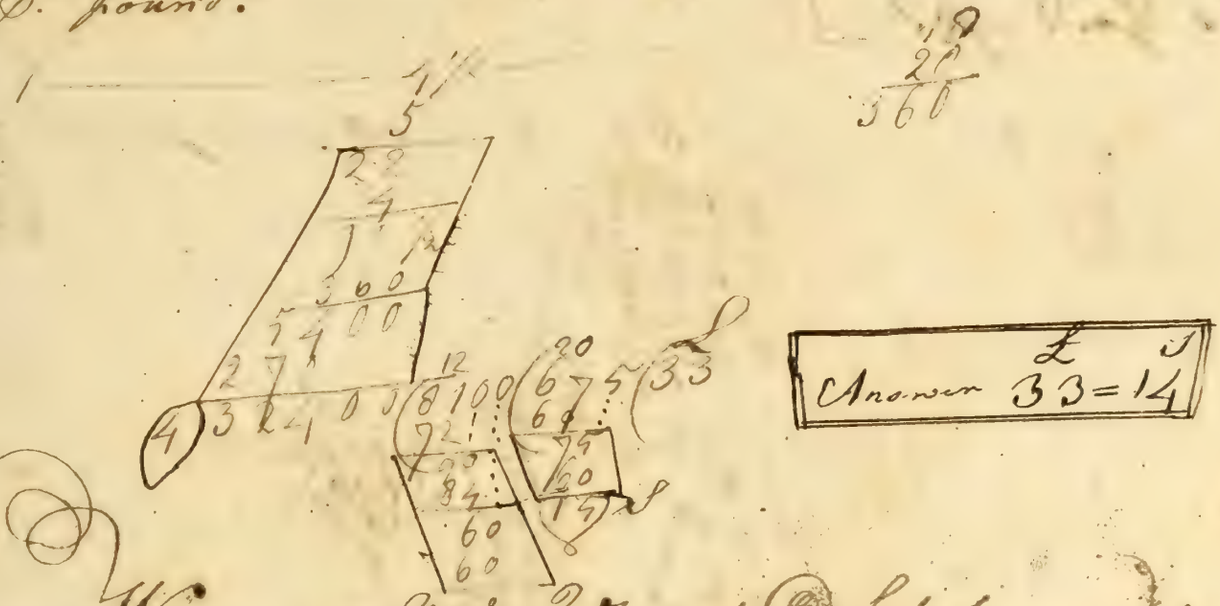
If a mans yearly income is £300 what is it per Day?

365 ——— 300 ——— 1

Continued

Coppers

To what comes a Hog that weight 18 Score at 4½ ₰ pound?

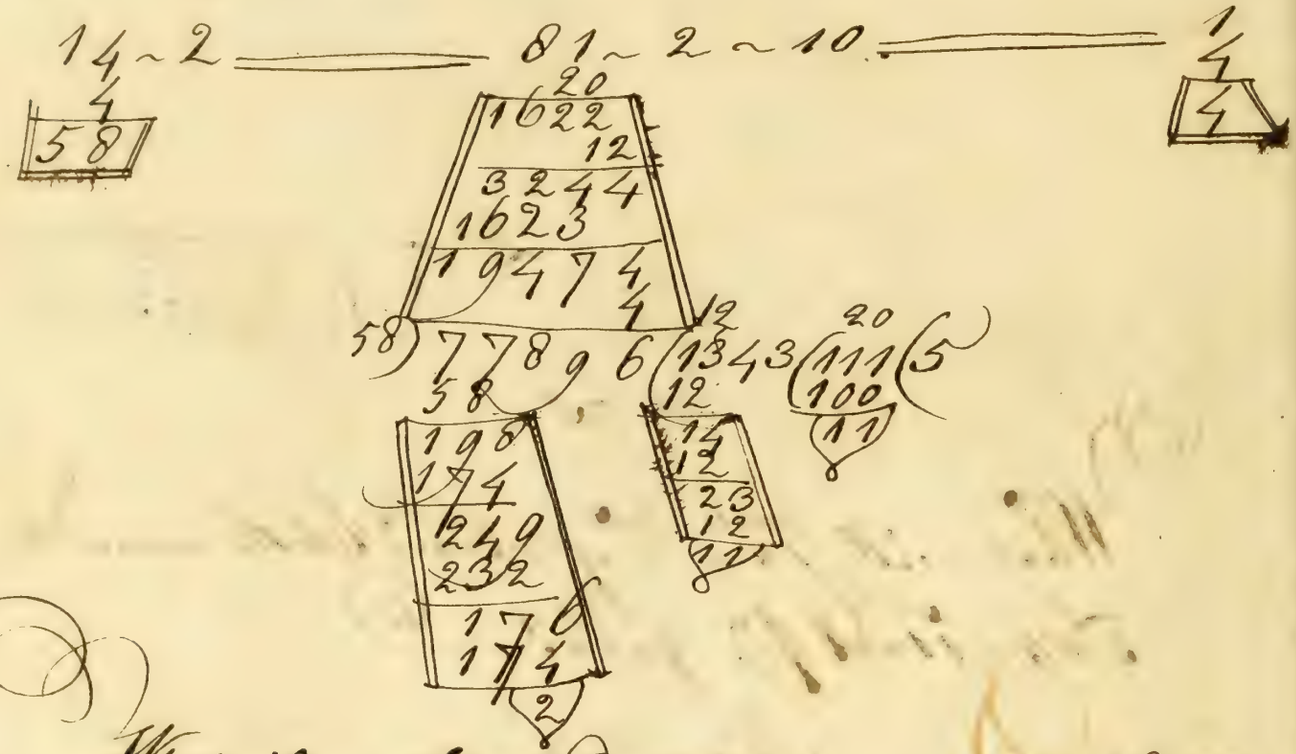


Answer £ 33 = 14

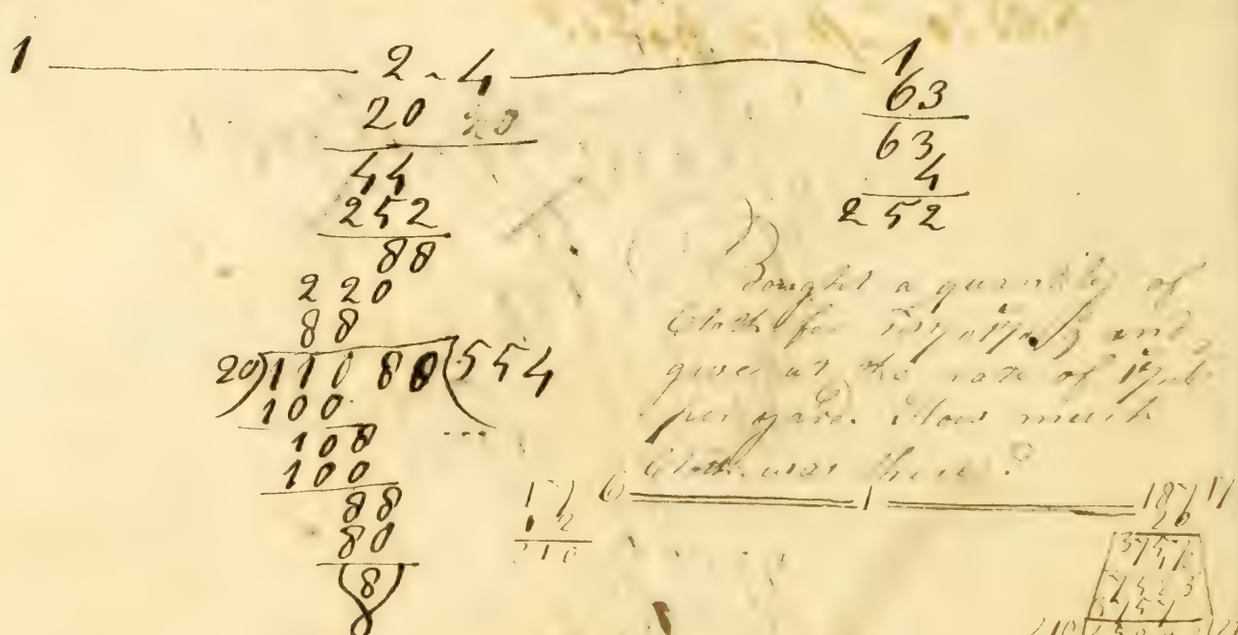
What will 14 Yards 2 qrs of Broad Cloth come to at £ 3 24 s 11 d 4 ₰ Yard?

Continued

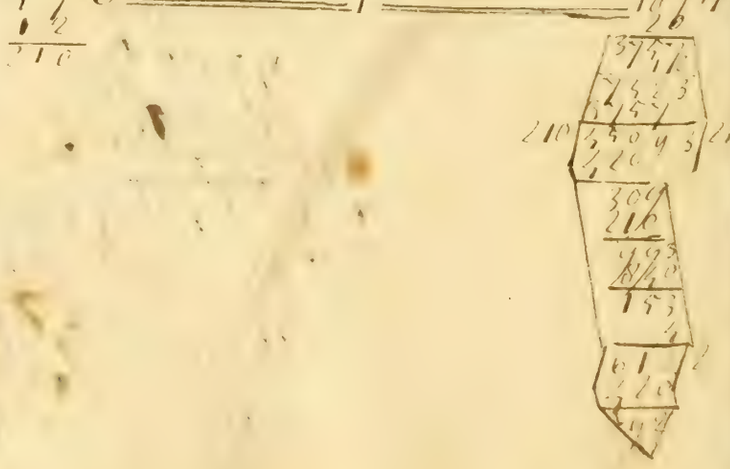
If 14 Yard. 2 qr. of Cloth cost £81 2s 10 what will 1 Yard cost?



What will a Hogshead of Rum come to at £2 ~ 4 per Quart?

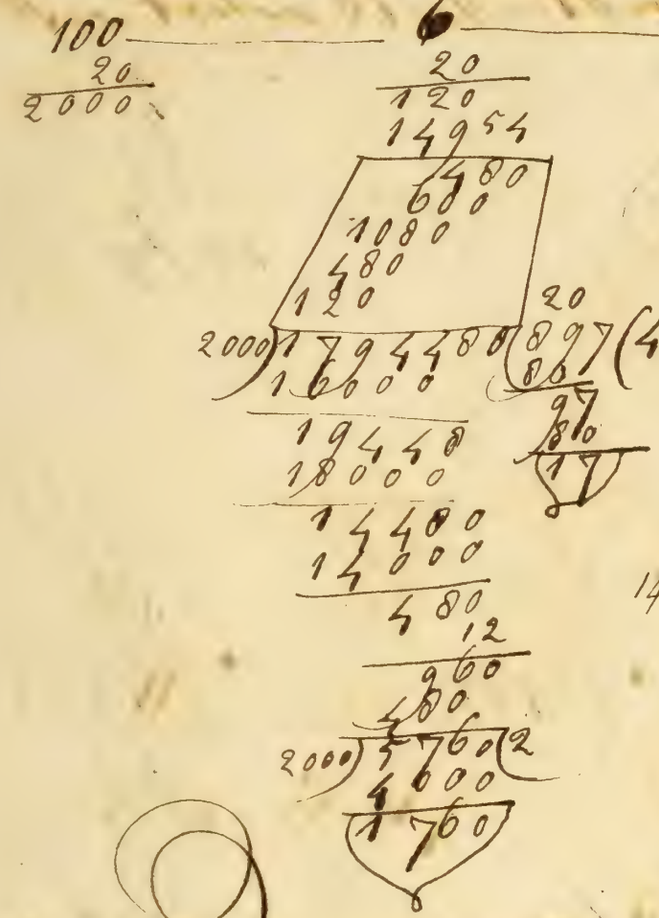


Bought a quantity of Cloth for 50 guineas and gave at the rate of 15s per yard. How much Cloth was there?



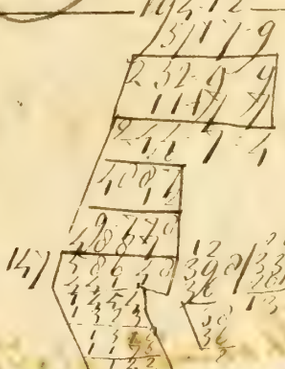
To what comes the Interest of 747 ℔ 14 ß for a Year at 6 for Cent.o

100 — 6 — 747 ~ 14



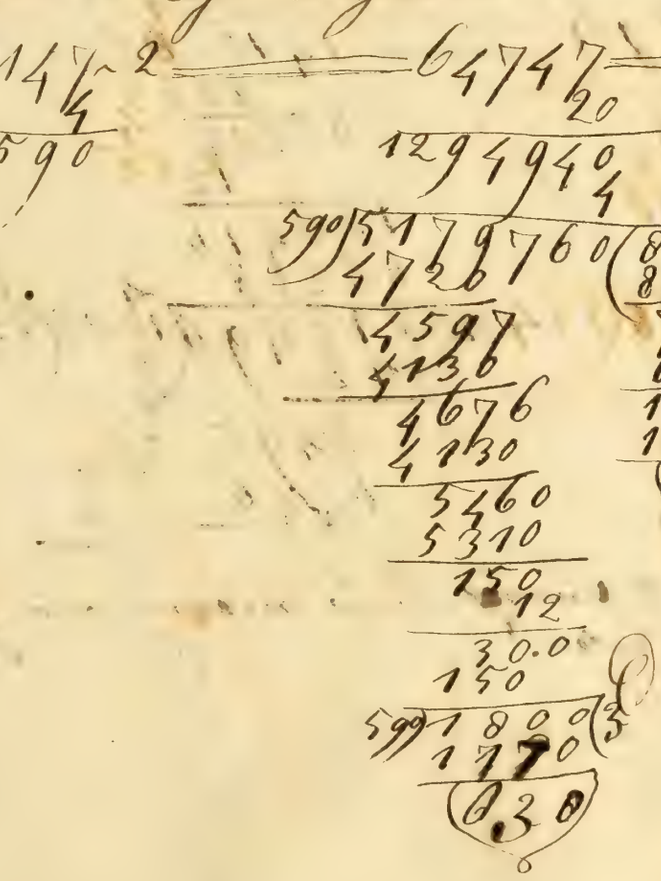
Bought in Amsterdam 147 Yards of Broad Cloth for 194 ℔ 12 ß paid 11 ß 1/2 for Freight and Commissions: How much is the Yard to stand me in, and how much by it.

147 — 194 12 — 1



Bought 147 ~ 2 Yards Cur of Broad-cloth for 6747 ℔ what did it cost a Yard.o

147 ~ 2 — 6747 — 1



What will a Hogshead of Wine come to at £ 3 7 8 p.r Quart.

1 —— 3-7-8 ——

20
67 12
142
67
812
1008
6496
0 0 0
0 0 0
812

12) 81849 6 (68208 (3410
72
98
96
24
24
96
96

60
82
80
20
20
8

1 —— 1 —— 1749 7

4
63
252
4
1008

12
40
4
20
20

26
3489 12
6985
3489
1 1873
210
2087
1896
1975
1896
85

3 yards 199 Answer

How much Wine will £ 3 4 10 s 8 buy at 3 s 7 s 8 p.r Quart.

3-7-8 —— 1 —— 3410-8

20
67 12
142
67
812

20
68208
12
136416
68208

812) 8.1849 6 (1008 (252 (4
812
8
20
20
8
8
6496
6496

63

If in 1 Week you do 9 Sums; how many can you do in a Year at that Rate?

1 —— 9 —— 52

468

52
52

If 147 Yards of Silk cost £29 47s 7d how must it be sold per Yard to gain £9 by it?

147 — 2947 7 — 1

147 | 6397 (434 (21
588
513
441
727
588
1392
1176
216
147
69

What must you have per Day to lay up £147 19s 8d p. Year?

1 — 147 19 8 — 1

52 | 52 | 2959 12
5926
2959
52 | 154116 (683 (56 (2
312
131
416
156
156

60 40
83 16
72
11

If you can earn £10 11s per Day how much would you earn in 7 Years at that Rate?

1 — 10 11 — 7365

12
21
11
131
2555
655
655
655
262

12 | 334705 (27892 (1394
24
94
84
107
96
110
108
25
24
1

26
78
60
189
180
92
80
12s

Supposing my Wages are £60 a Year, what is that per Day excluding Sundays?

365
52
313

300
20
313)6000(19
313
2870
2817
53
12
106
53
313)636(2
626
10

Ans. 19. 2 Days

1 ——— 300 ——— 1

Yorke's fly broke out of prison and marched off at the rate of 37 Miles a Day; on the 5th Day Jolly Waterson sent out after him, and goes 45 Miles a Day: How long will it be by the Jolly will be overtaken?

45 ——— 1 ——— 37
37
8

8 | 185 | 23
16
25
24
24
8 | 24 | 3
24

Supposing you give £6-2 for 1 Pound Pork, how much must you give for 8 Score and 10 Pounds at that Rate?

1 ——— £6-2 ——— 8-10

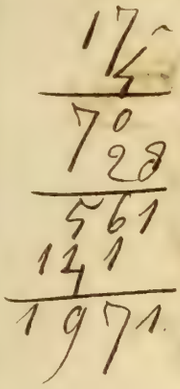
12
10
2
30
4
122
170
850
122
4)2074(518(12
20
7
4
32
32
20
20
30
36
25
24
1
20
32
20
12
21-12-1

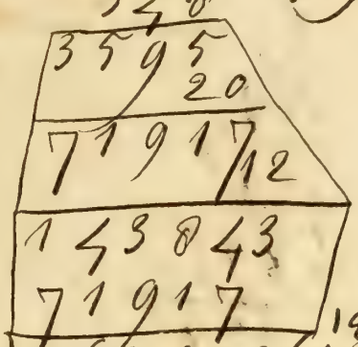
9-6 ——— 1 ——— 39-8
4-5
9½-11
119

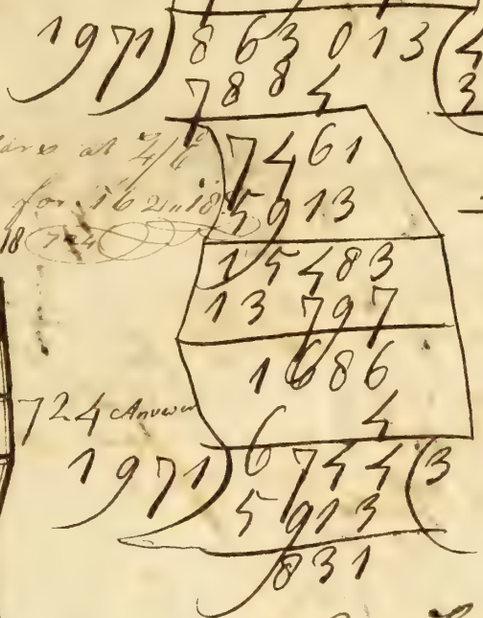
119 624

Bought C 17 cwt 2 qr 11 lbs of Sugar for £ 247 s 17 d 9 how must it be sold per pound to gain £48 by it?

17 ~ 2 ~ 11 ——— 3247 ~ 17 ~ 9 ——— 1

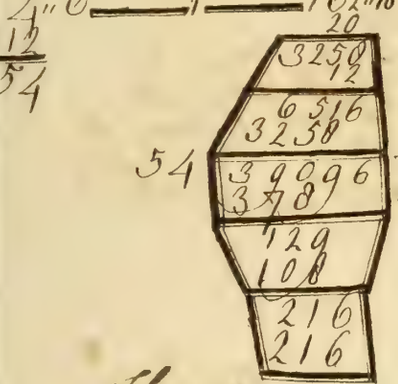






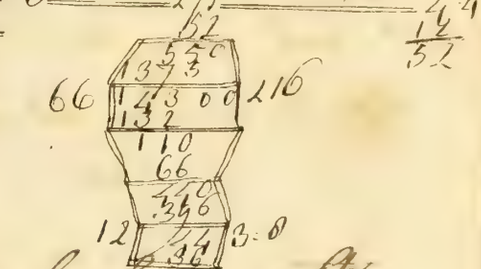
How many £ Dollars at 4/6 may one have for 162 ll 18 s?

4 ~ 6 ——— 1 ——— 162 ~ 18



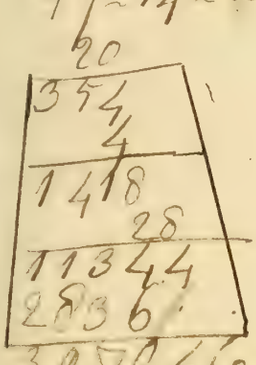
How many Portugal Ducats a piece at 4/6 the same may be had for £ 247 17 9 Sterling at the Exchange of 5 1/2 the Ducat?

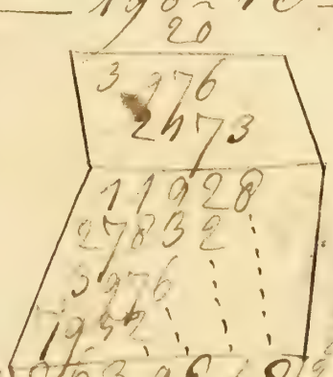
5 ~ 6 ——— 2 5/5 ——— 4 ~ 4

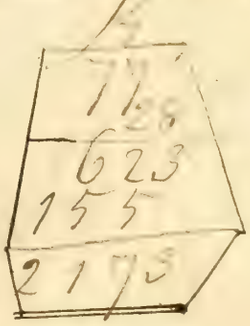


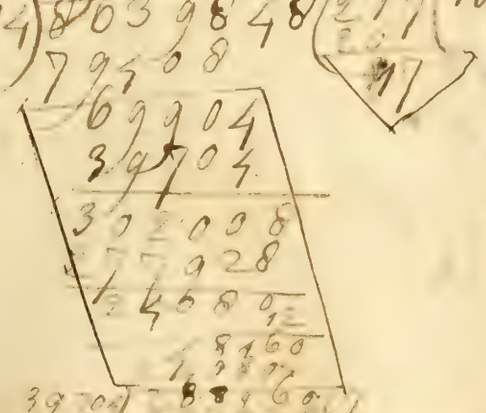
If the Carriage of C 17 cwt 14 ll 2 of Sugar cost £ 198 ~ 16 what will the Carriage of C 10 cwt 1 qr 17 lbs cost at the same rate?

17 ~ 14 ~ 2 ——— 198 ~ 16 ——— 10 ~ 1 ~ 17

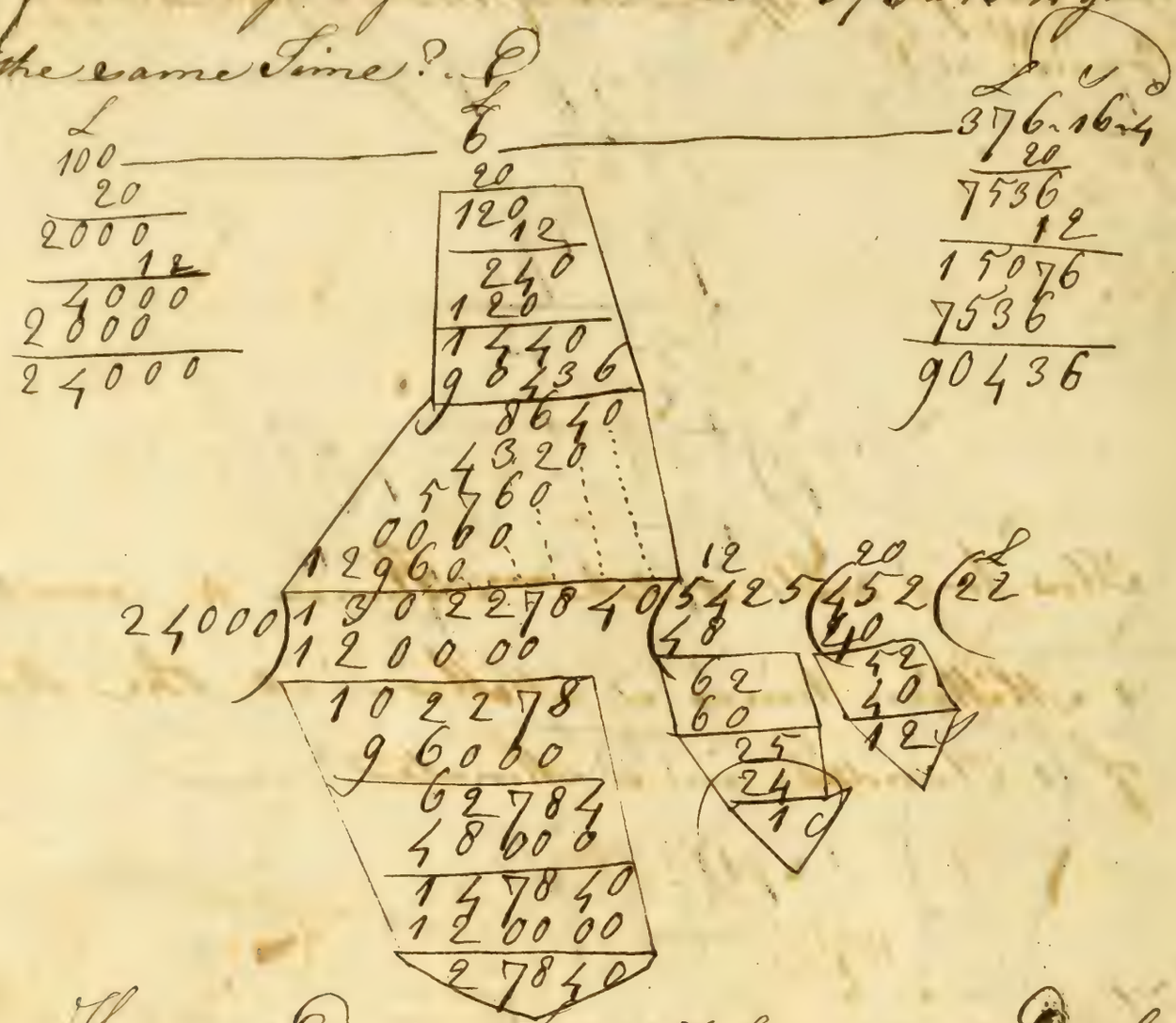




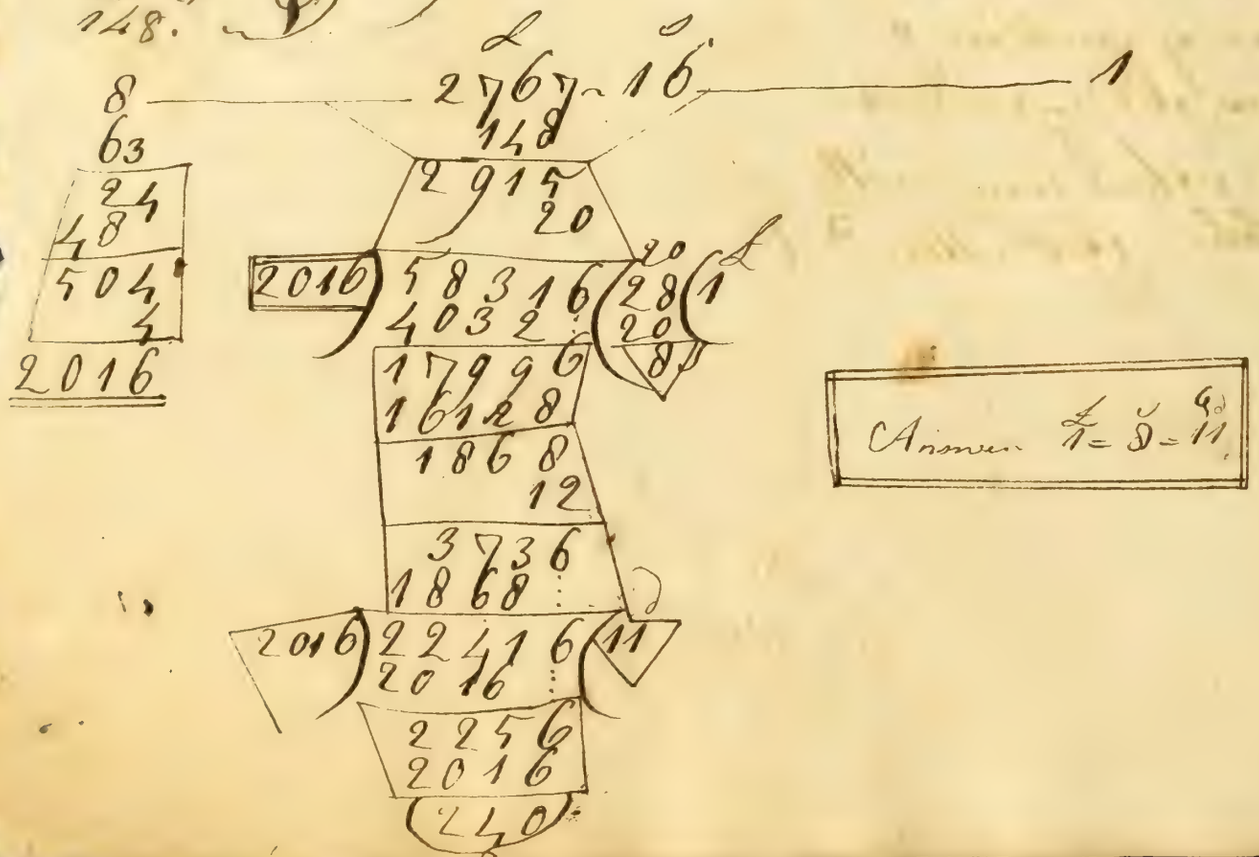




If £100 in a year gain £6 what will £376-16-4 gain in the same Time?

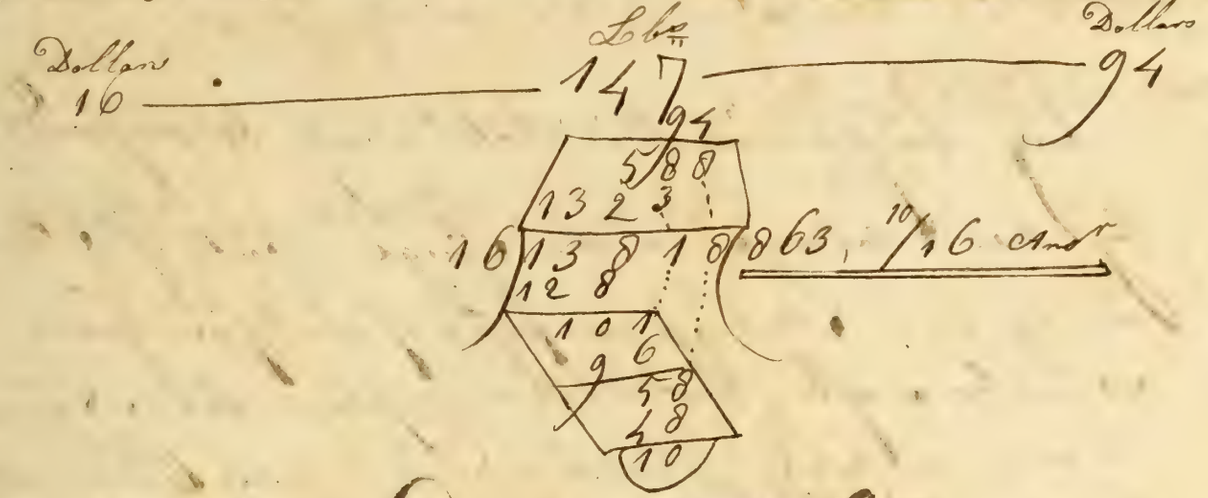


If you should give 2767-16 for a Hogshead of Rum, how must you sell it per Quart to gain £48.

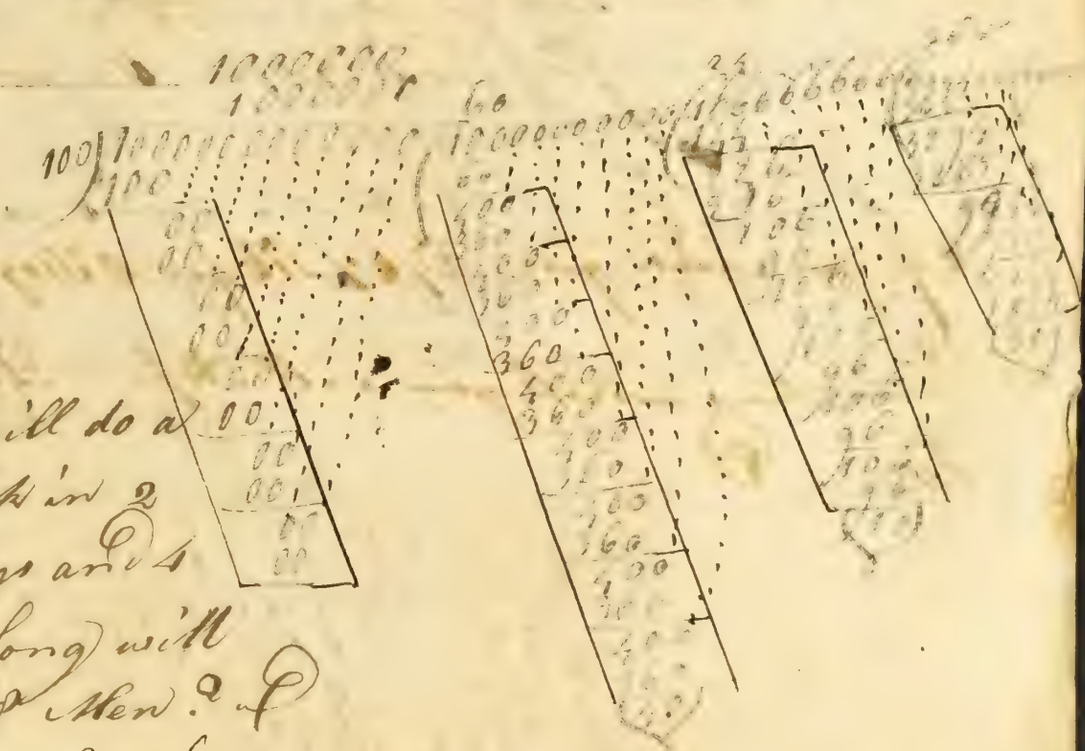


Answer £1 = 9 = 11

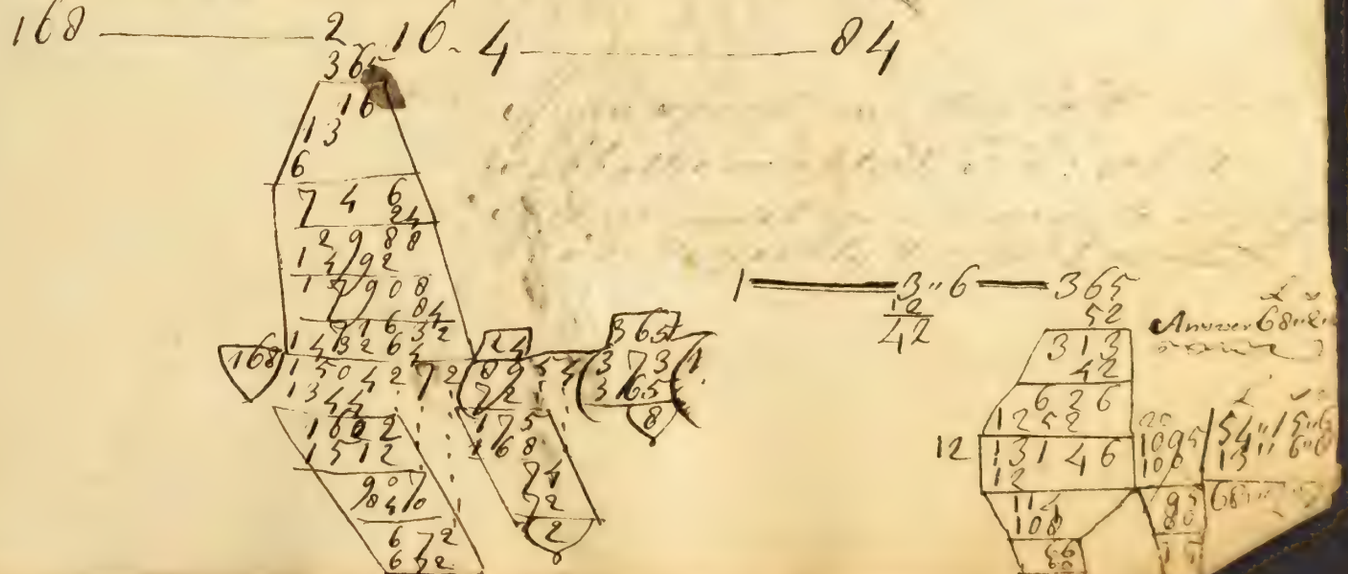
How many Pounds of Butter at 16 Dollars pr. Pound must you give for 147 Pounds of Tea at 94 Dollars pr. Pound?



How long would it take a Woman to count 1 Million times a Million at the Rate of 1 Hundred in a Minute?



If 84 Men will do a piece of work in 2 years, 16 Days and 4 Hours; how long will it take 168 Men?



The Double Rule of Three

Any Question in this Rule may be answered by two Statings in the Single Rule of Three, or by one Stating composed of the five given Numbers after this Manner; place the Numbers in one convenient Rank and in such Order that the first and ~~fourth~~ Numbers may be of one Name or Kind, and the second and fifth; then multiply the two first together for a Divisor and the three last for a Dividend and the Quotient thence arising will be the Answer.

Example If £100 in 12 Months gain £6 what will £147 gain in 2 Years?

£	M	£	£	Y
100	12	6	147	2
12			24	12
200			588	24
100			294	
1200			3528	

6

1200) 21168 (17 Ans. £17-12-9

1200

9168

8400

768

20

1200) 15360 (12 s

1200

3360

2400

960

12

1920

960

1200) 11520 (9 d

10800

720

Continued

If in 7 Horses in 16 Days eat 32 Hundred of Hay: How much will 47 Horses eat in 98 Days at that Rate?

7 — 16 — 32 — 47 — 98

16
12
7
112

9 8
3 7 6
4 2 3
4 6 0 6
3 2
9 2 1 2
1 3 8 1 8
112 | 4 4 7 3 9 2 (1316 Answ.
1 1 2
3 5 3
3 3 6
1 7 9
1 1 2
6 7 2
6 7 2
10

If in 7 Days 4 Men lay 28 Rods of Wall: How many Rods will be laid by 37 Men in 19 Days?

7 — 4 — 28 — 19 — 37

4
28

3 7
1 3 3
5 7
7 0 3
2 8
5 6 2 4
1 4 0 6
28 | 1 9 6 8 4 (703 Rods
1 9 6
8 4
8 4

Continued

If in 8 Days 4 Horses eat 32 Bushels of Oats: in 15 Days how many Bushels will 47 Horses eat?

8 — 4 — 32 — 15 — 47

4
32

47
105
60
705
32
1410
1115
32)2255(105 Bushels
224
110
110

If 20 Goats for 30 Groats go 40 Weeks to Graze; How many Hounds for 60 Crowns may winter in that Place?

Weeks — Groats — Goats — Weeks — Crowns

12 — 30 — 20 — 40 — 60
120 — 4 — 3600 — 5
240 — 120 — 24000 — 300
12 — 120 — 12
1440 — 144000 — 600
20 — 300
2880000 — 3600
1440)2880000(2000 Hounds
2880
000

To how much will the Interest of £947 16 com'd for 20 years at 6 per Cent per Annum?

100 — 1 — 6 — £947 16 — 3
20 — 12 — 20 — 12
2000 — 12 — 18956 — 36
12 — 113736
24000 — 5684
68416
6
2400)£409296(17 0 Interest
16
169
160
1496
20
2400)29920(12
24000
5920
4800
1120

Simple Interest

Rule) Multiply the Principal Money by the Rate of Interest and that Product divide by 100 and that Quotient will be the Answer

Example. What is the Interest of £184 16s 4d for a Year at 6 pr. Cent?

£ s d
184 - 16 - 4
6
£11 08 - 10 - 0
20
s 17 10
12
12 6
76
d 9 16

Answr £11 - 1 - 9

What comes the Interest of £847 18s 7d for a Year at 6 pr. Cent?

£ s d
847 - 18 - 7
6
£50 87 - 11 - 6
20
s 17 51
12
12 6
108
d 6 18

Answr £50 - 17 - 6

So what comes the Interest of £64 18s 9d for a Year at 7 pr. Cent?

£ s d
64 - 18 - 9
7
£6 51 - 13 - 3
20
s 10 93
12
12 9
108
d 9 9

Answr £6 - 10 - 11

Interest

To what comes the Interest of £887 14s 8d for 6 Months at 6 p.r Cent?

£ s d
887 — 14 — 8
6
5320 — 8 — 0
20
5 28
12
56
20
3 36

£ s d
53 — 5 — 3
26 — 12 — 7½ Answ.

What comes the Interest of £464 4s 4d for 6 Months at 6 p.r Cent?

£ s d
464 — 4 — 4
6
27 85 — 6 — 0
20
17 06

£ s d
2) 27 — 17 for a year
2) 13 — 18 — 6 for 6 Months
Answ. 26 — 19 — 3 for 3 Months

For 6 Months, what is the Interest of £1809 18s 7d at 6 p.r Cent?

£ s d
1809 — 18 — 7
6
191 39 — 11 — 6
20
11 91
12
1098

£ s d
191 — 7 — 10
45 — 13 — 11

Give me the Interest of £1876 14s 7½d for 3 Months at 6 p.r Cent?

£ s d q
1876 — 14 — 7 — 2
6
112 60 — 7 — 9 — 0
20
12 07
12
93
4
3 12

£ s d q
112 — 12 — 3 9
56 — 6 — 1 — 2
£ 28 — 3 — 0 — 3

Interest

If you would find the Interest of Pounds, Shillings and Pence, for Years, Months and Days; Reduce the Principal Money into Pence, then multiply those Pence by the Time reduced to Days; then that Product must be divided by 6083 which Quotient is the answer in Pence.

Exam.le What will the Interest of £472 : 17 : 4 amounts to in 2 years 4 Months and 24 Days at 6 p.r Cent.?

L	s	d	Y	M	D
472	17	4	2	4	24

20 / 12 / 12 / 12

2 / 4 / 30 / 864

472 20 9457 12 250918 129457 1553488 864 6213952 932092 12427904

6083 | 13427136320 | 2206499 | 183879 | 919

2166 12561 12166 39536 36498 3038 24382 6054 5476 578

12 180 96 96 36 104 96 89 84 5

20 180 30 20 187 180 7

£472 : 17 : 4 — 2 Y 4 M 24 D

12 / 39 / 1173

12954 / 25922 / 12957 / 12954 / 1173

1146 / 1146 / 1146 / 1146

6083 | 18319116 | 182499 | 2031 | 6083 | 9481 | 6083 | 23996 | 18249 | 5747

30 / 24 / 61 / 60 / 113 / 108 / 5

2509 / 20 / 50 / 40 / 109 / 100 / 9

£125 : 9 : 5

Interest.

I desire to know the Interest of £674 16s 8d for the space of 3 Years 3 Months and 3 Days at 6 p.r Cent.

£ s d
674 16 8 — 3 — 3 — 3

20
13496
12
27000
13496
161960
1173
485880
113372
161960
161960

6083 | 18979080 | 3183 1 | 2602 | 130
18249
7308
6083
12250
12166
19048
18249
7990
6083
1907

12
38196
36498
1698
20
33960
16980
2031
1018800
122280
18342
20370
6083 | 3639108 | 598
36498
33369
30415
29541
18664
8770
6083
26870
24332
2538

20
60
60
52
24
D 7

What is the Interest of
£48 18s 4d for 5 Years
5 Months and 15 Days
at 6 p.r Cent. £ s d
5 — 5 — 15

48 — 18 — 4
20
16978
12
33960
16980
2031
1018800
122280
18342
20370

12
65814 | 54840 | 2274
60
58
48
101
96
54
48
D 6

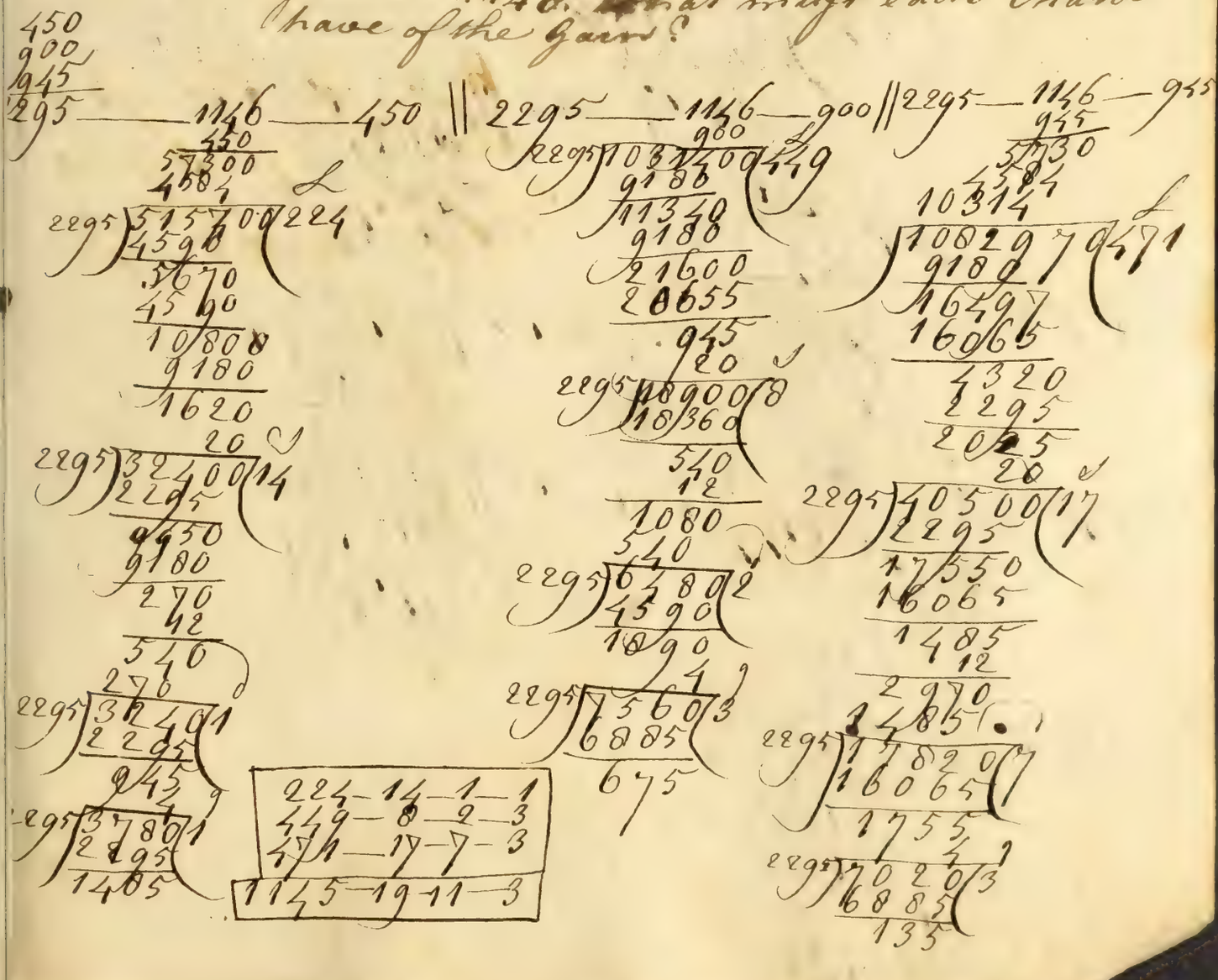
20
960
12
11520
86
86
D 4

Single Fellowship.

This Rule is made use of in selling Estates and in adjusting Accounts in Partnership &c.

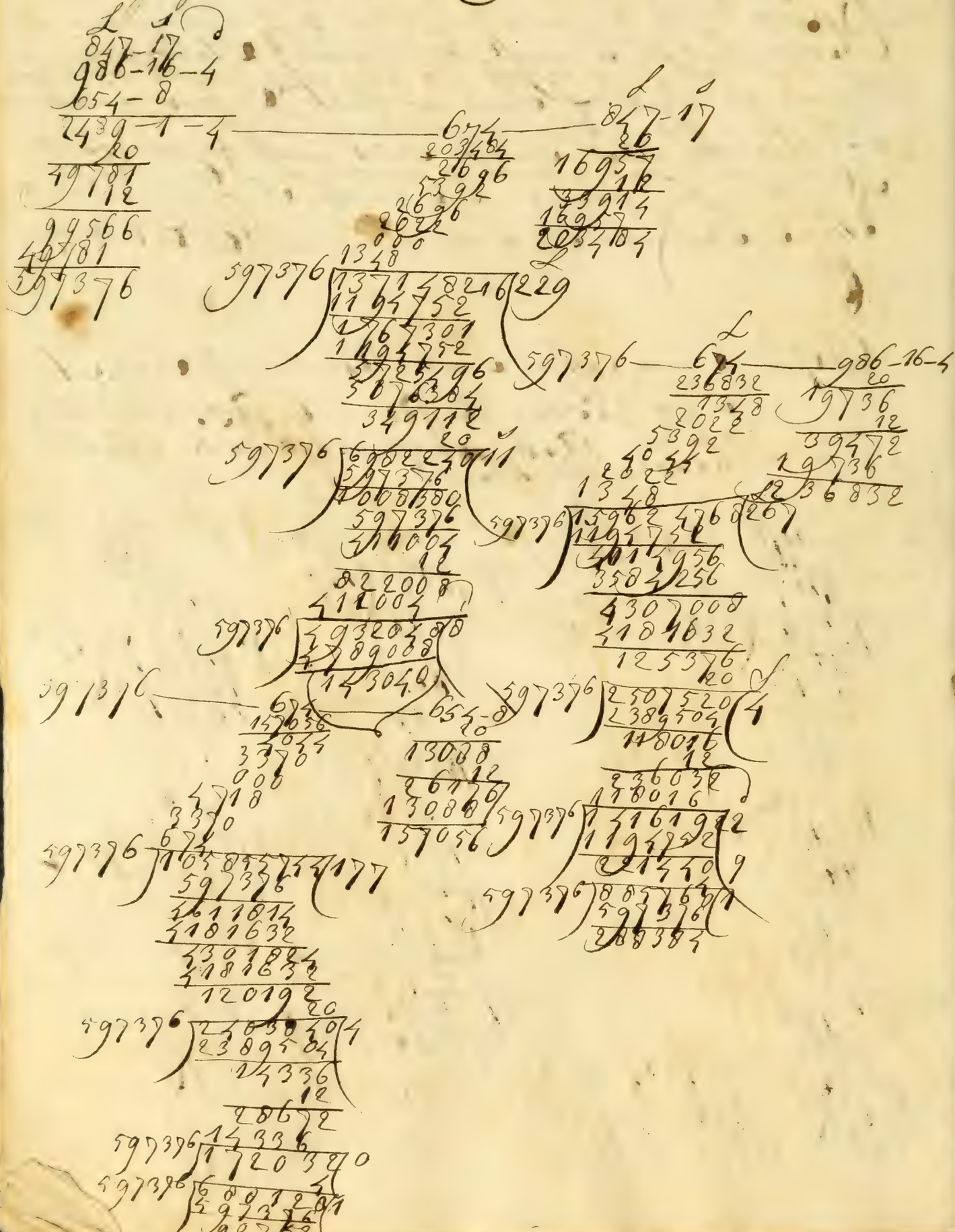
Observe that there must be as many Stakings in the Single Rule of Three as there are Persons concerned; and that the whole Sum or Total must be the first Number; the Gain or Loss &c. the Second; and each Mans Particular Stock the third.

Exple. Three Men went a Venture to Sea; A. went 450. — B. 900. — C 945. and they gained 1146. what must each Man have of the Gain?



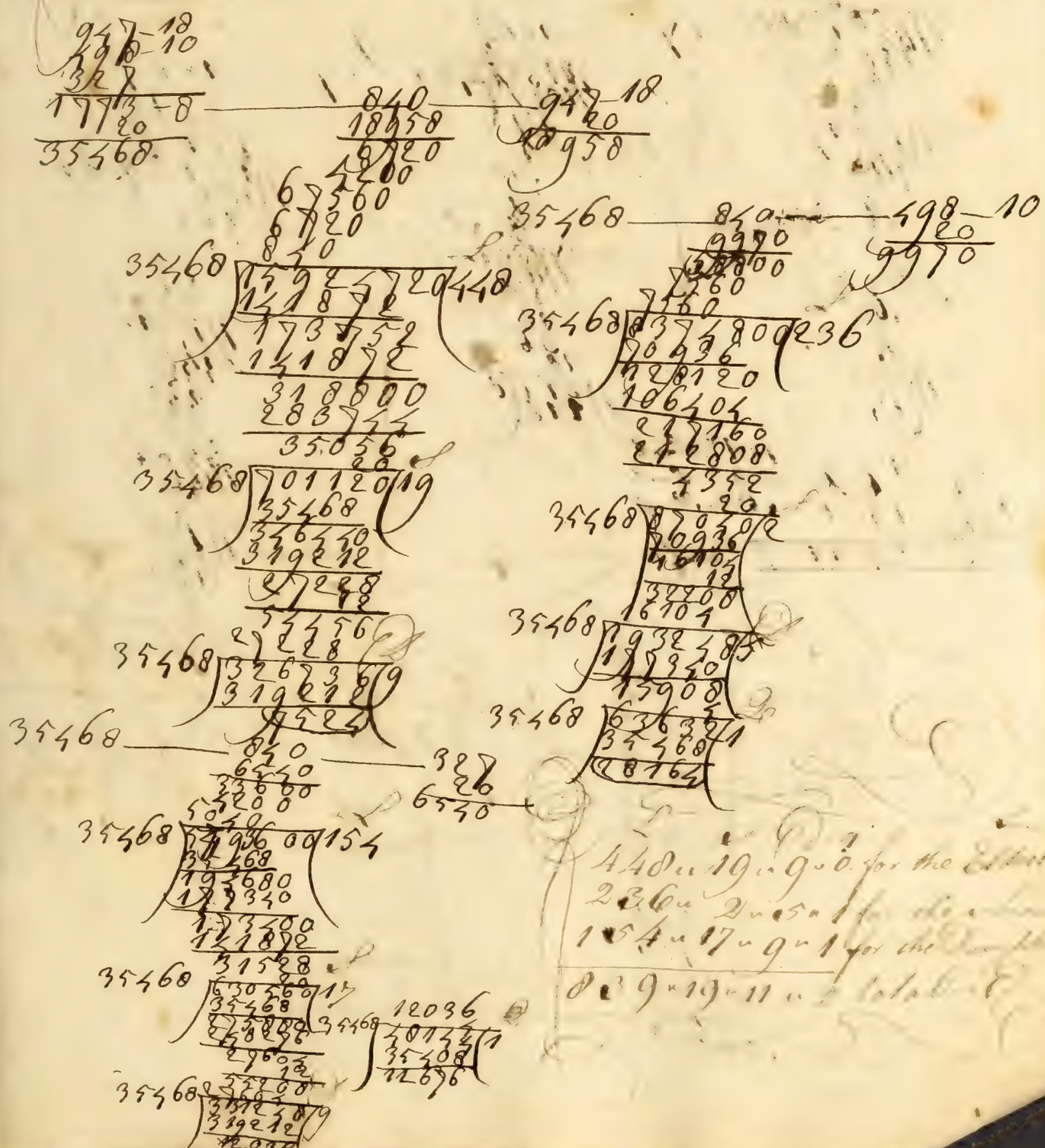
Fellowship

Three Merchants join in Trade. A. puts in £47-17-
B. puts in £986-16-4 C. puts in £654-8
they gain £674; what must each have?



Fellowship

A Gentleman making his Will bequeathed to his three Children the Same following to his Eldest Son 947 : 18 : — to his Second 498 : 10 — to his Daughter 236 : — Now at his Death his whole Estate was worth but 840 — the Question is what each must have according to their several Legacies? —


947 18
498 10
236
1781 8
20
35468
840
18458
8920
4200
6360
6120
840
35468
35468
35468

Fellowship

Three persons (viz.) A. Band C. had £126 to be divided between them in such a manner that as often as A. has 6. B. must have 9. and as often as B. has 9. C. must have 12; according to which proportion how much must each have of the £126?

6
12
27 — 126 — 6

27)280(10
27
190
189
1
27)1(0
0
1

27 — 126 — 9

27)1134(42
108
54
54
0
27)0(0
0
0

27 — 126 — 12

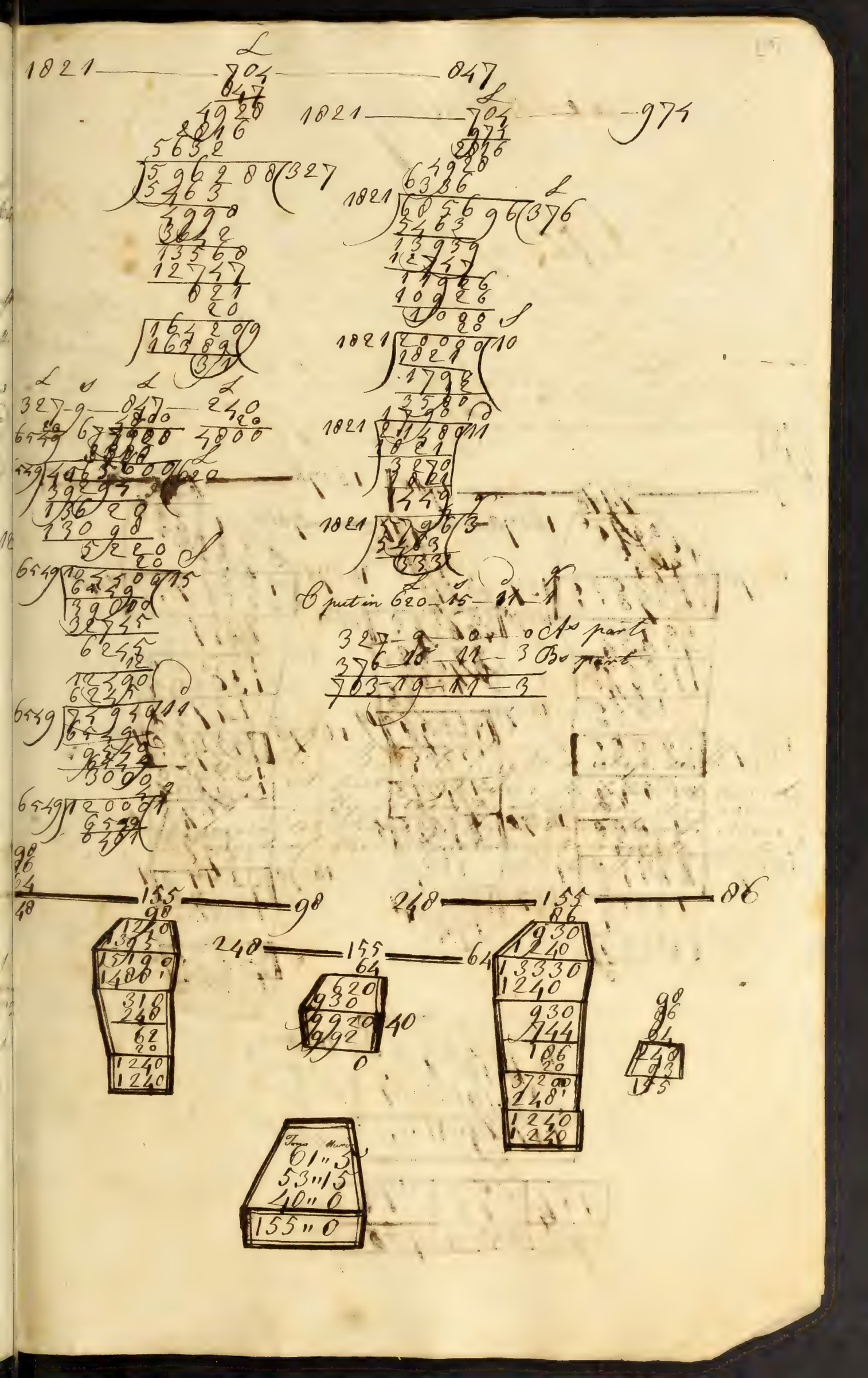
27)1512(56
135
162
162
0
27)0(0
0
0

280 — 17 — 9 — 10½ Part
21 — 6 — 6 — 08½ Part
561 — 15 — 6 — 26½ Part
1263 — 19 — 11 — 3 Total

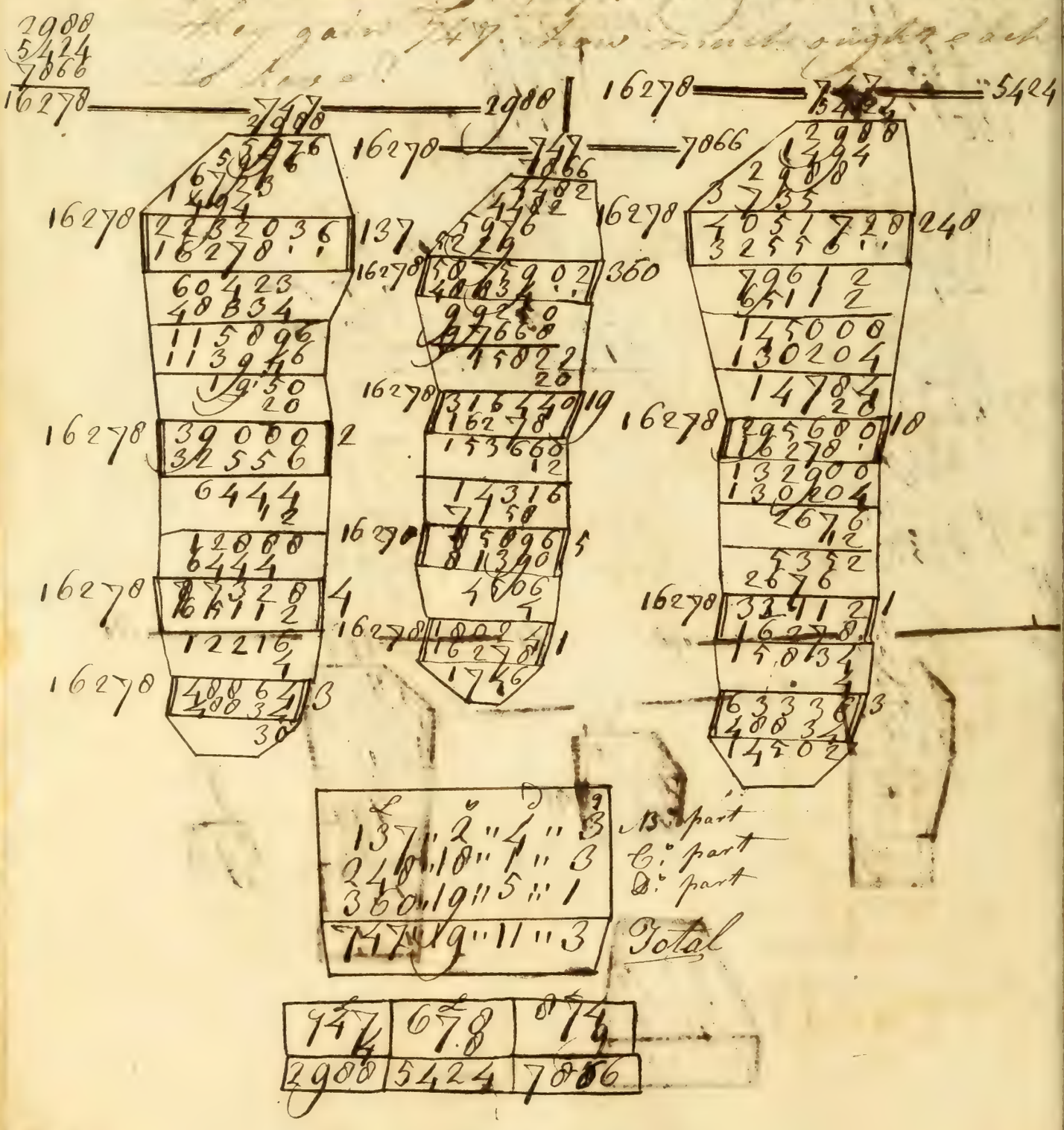
A. B. and C. went into partnership, & put into stock £ — B. £9 & C. a Sum unknown with which they gain £42; of which C. for his part took £20: now I desire to know how much C. put in, and A. and B. part?

2 1 1 0
7 0 1

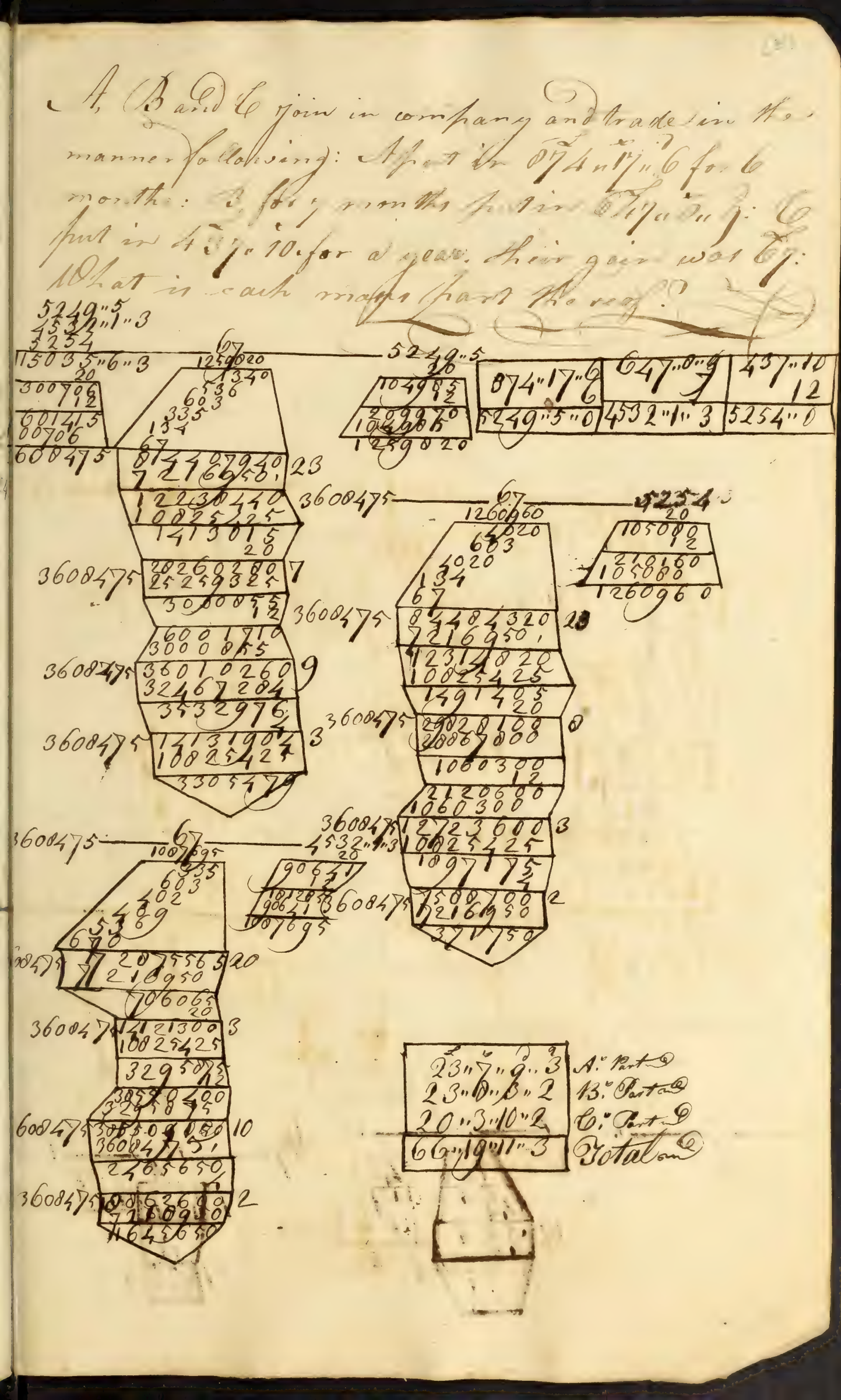
8 1 7
2 7 1
1 8 2 1


1821
1821
1821
1821
1821
1821
1821
Output in 620 15 11 1
As part
Bs part
Tons
Mans
61 " 3
53 " 15
40 " 0
155 " 0

Double Fellowship



A, B and C join in company and trade in the manner following: A put in 874"17"6 for 6 months: B for 5 months put in 647"0"9: C put in 457"10 for a year. Their gain was 67: What is each man's part thereof?



Alligation.

When it is required to mix several sorts of Ingredients together; as different sorts of Corn Wines &c: or Spices or Liquid medicines &c; the method of proportioning such mixtures is called Alligation.

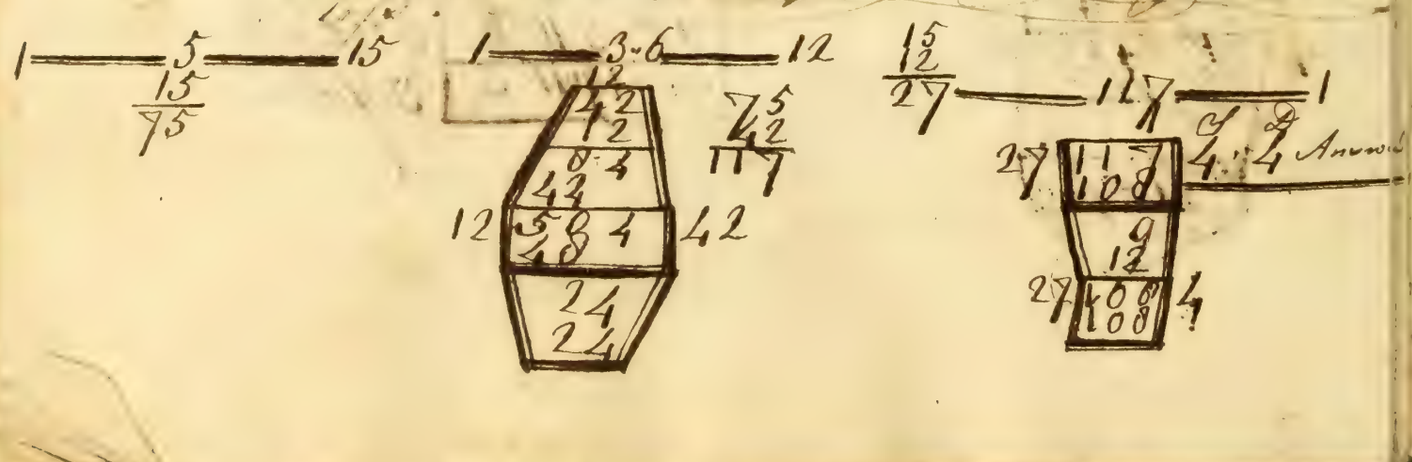
Alligation Medial.

It is that by which the mean rate or price of any mixture is found, when the particular quantities of the mixtures and rates are given. And is thus performed.

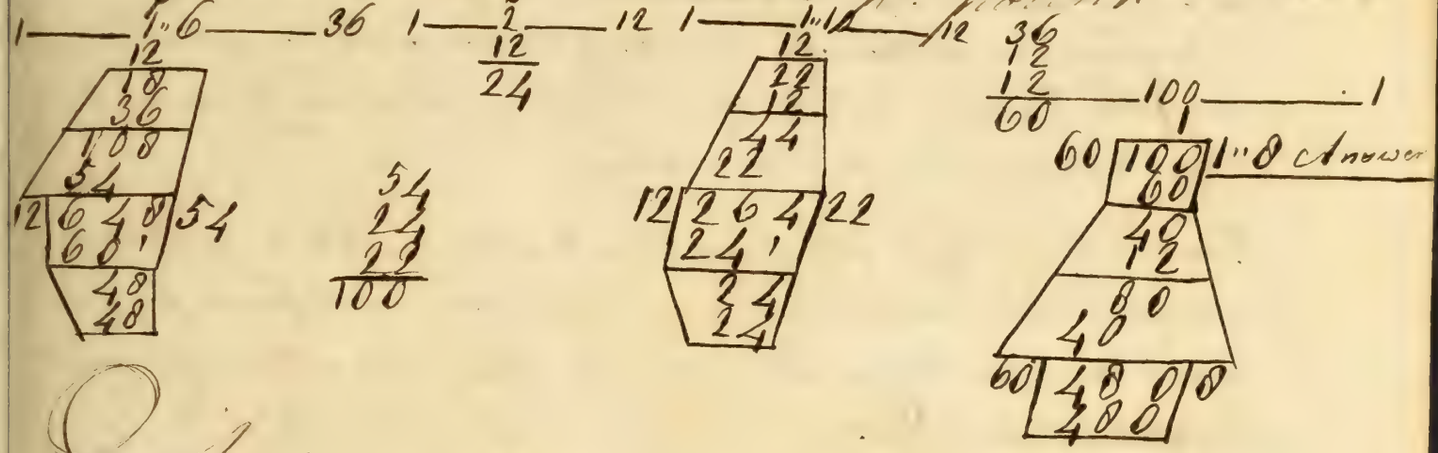
First find the sum of the quantities proposed to be mixed; and also the sum of their particular rates.

Then, As the sum of all the quantities: is to the sum of all their rates :: so is any part of the mixture: to the mean rate or price of that part.

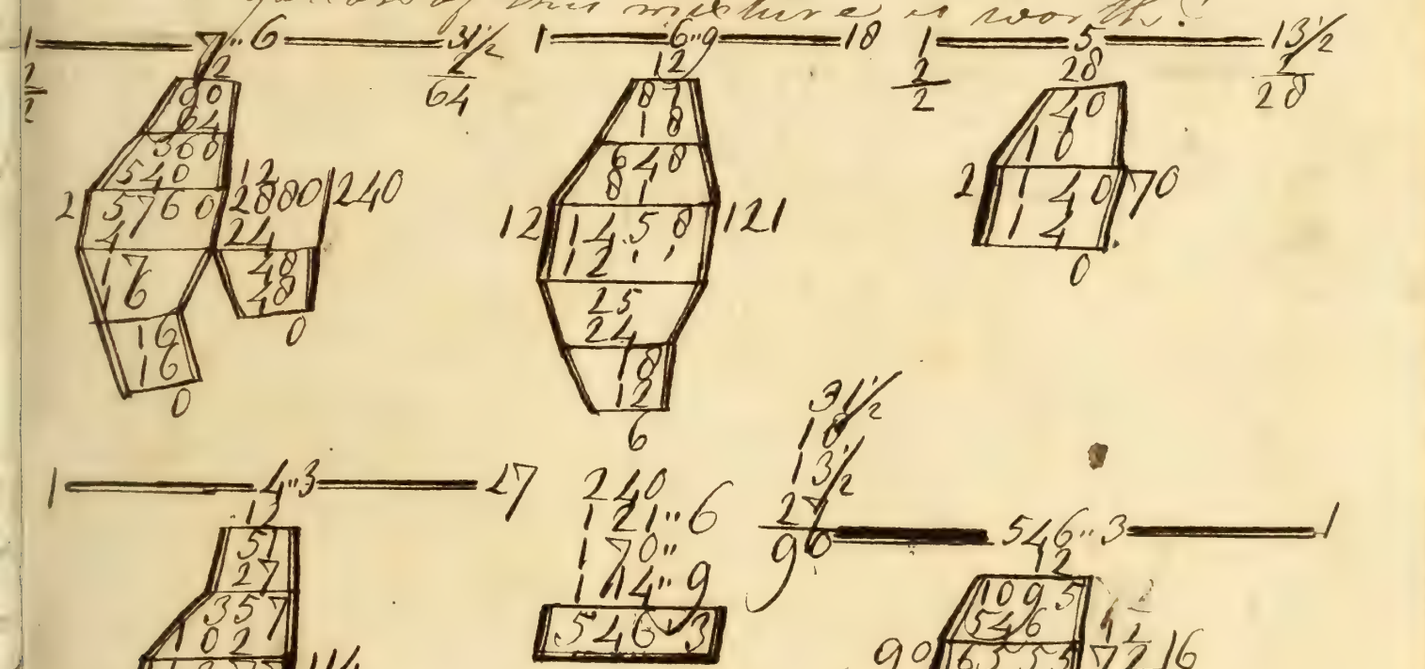
Prof. Suppose 12 bushels Wheat at 5/ the bushel was to be mixed with 12 bushels Rye at 3/6 the bushel: What is it worth per bushel without gain or loss?

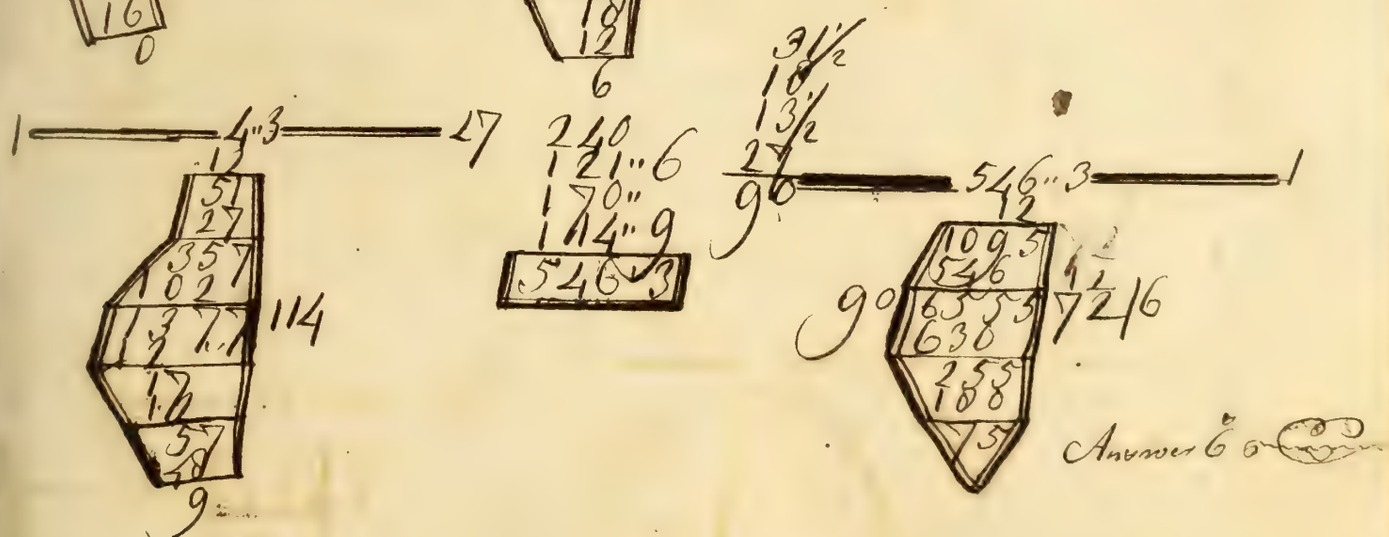


A Grocer mixeth 36 pounds of Tobacco, worth 1/6 a pound with 12 pounds of a nother sort worth 2/ a pound. & 12 pounds of a third sort at 5/10 a pound. How may he sell the mixture a pound?



A Vintner mixeth 31/2 gallons of malaga each worth 7/6 the gallon; with 10 gallons canary at 6/9 the gallon; 13/2 gallons sherry at 5/ the gallon; and 27 gallons white wine at 4/8 the gallon. He requires to find what a gallon of this mixture is worth?





Answer 6 6

Of Alligation Alternate.

Alligation Alternate, is that by which the particular Quantities of every Ingredient concern'd in any Mixture are found; when the particular rates of every one of those Ingredients, & the mean rate are given; being (as more) the Converse to Alligation Medial; as will appear by the following Operations; which admits of three Cases.

Case 1st. the particular rates of any Ingredients proposed to be mixed, & the mean rate of the whole mixture being given, to find how much of each Ingredient is requisite to compose the mixture; when the whole Quantity, or any part thereof is not Limited.

Note, in all the Questions of this Nature, it will be convenient to place the mean rate so, as that it may be easily compared with the particular rates, in order to find every one of their Differences from the mean Rate by inspection only.

How much wheat at 5/ the bushel and rye at 3.6 the bushel will compose a mixture that may be sold for 4.4 the bushel?

5/ — 1.4 — 32 — 1
4.4 — 3.6 — 42 — 1

52 (60) 1 W
(42) 0 R

At

[illegible] of 18 [illegible] of 22 pound, and [illegible] pound [illegible] much of each [illegible] for 20 the pound?

1/4 — 20 (18) 2
1/4 — (22) 2
(24) 4

A Vintner would make a mixture of malaga worth 7/6 p^r. gallon, with canary at 6/9 p^r. gallon, sherry at 5/ p^r. gallon and white wine at 4/3 p^r. gallon; what quantity of each sort must he take, that the mixture may be sold for 6/ the gallon?

7/6 — 6/9 — 5/ — 4/3

90 — 81 — 60 — 51

6

72

(90) 21 M
(51) 18 W

72 (60) 9 S
(81) 12 C

In all Questions of this kind, wherein it is required to mix Four things together, Two of them having their Prices Greater & two lesser than the mean rate; you must always Alligate or compare a greater & lesser Price with the mean Price setting down their Differences Alternately, as in the First example of this Section.

Case 2nd. the particular rates of all the Ingredients proposed to be mix'd, the mean rate of the whole Mixture, & any one of the Quantities to be mix'd being given. thence to find how much of every one of the other Ingredients is requisite to compose the mixture.

In this Case you must set down all the particular rates, with the Mean rate, & find their Differences just as before; without any regard had to the Quantity given.

How much wheat at 5/ the bushel must be mixed with 12 bushels of rye at 3/6 a bushel: that the whole mixture may be sold for 4/4 the bushel

Then, as the quantity found by the difference of the same name with the quantity given: Is to the quantity given:: So is any of the other quantities found by the differences: To the quantity of its name.

5/ — 3/6 — 4/4

12 — 12 — 52

60 — 42

52 (60) 10 W
(42) 8 R

8 :: 12 :: 10

10

120
8

40
40
0

15 Bushels

Alligation.

How much malaga at 7s 6d the gallon, sherry at 5s the gallon, and white wine at 4s 3d the gallon; must be mixed with 18 gallons of canary at 6s 9d the gallon, that the whole mixture may be sold for 6s the gallon?

7s 6d / 9s — 1½ — 60 — 5s 3d / 4s 3d — 1½ — 51 — 6s 9d / 6s — 1½ — 81

6 / 1½ / 72

(90) 12 6
(60) 18 11 7
72 (51) 9 4
(81) 21 11

12 : 18 :: 18 — 18 — 1 — 1 — 1 — 1 — 0 — 1 — 0 — 1 — 0

Suppose it were required to mix Malaga at 7s 6d the Gallon, with Canary at 6s 9d the Gallon; Sherry at 5s the Gallon, and white wine at 4s 3d the gallon; so as that the whole mixture may be 90 gallons; to be sold for 6s the Gallon: how much of each sort will compose that mixture?

7s 6d	6s 9d	5s	4s 3d
12	12	12	12
90	81	60	51

12
6
12

90	21
81	18
63	9
60	12

60

60 : 90 :: 9

60	10	13½ Sherry
60		
210		
180		
30		

9 : 13½ :: 18

9	216	24	27 White wine
	27		
	189	3	
	27	54	
	162	4	
	27	216	
	135	27	
	27	189	
	108	27	
	27	162	
	81	27	
	27	135	
	54	27	
	27	108	
	27	27	
	0	81	
		27	
		54	
		27	
		27	
		0	

18 : 27 :: 21

18	567	31½ Malaga
	54	
	27	
	27	

21 : 31½ :: 12

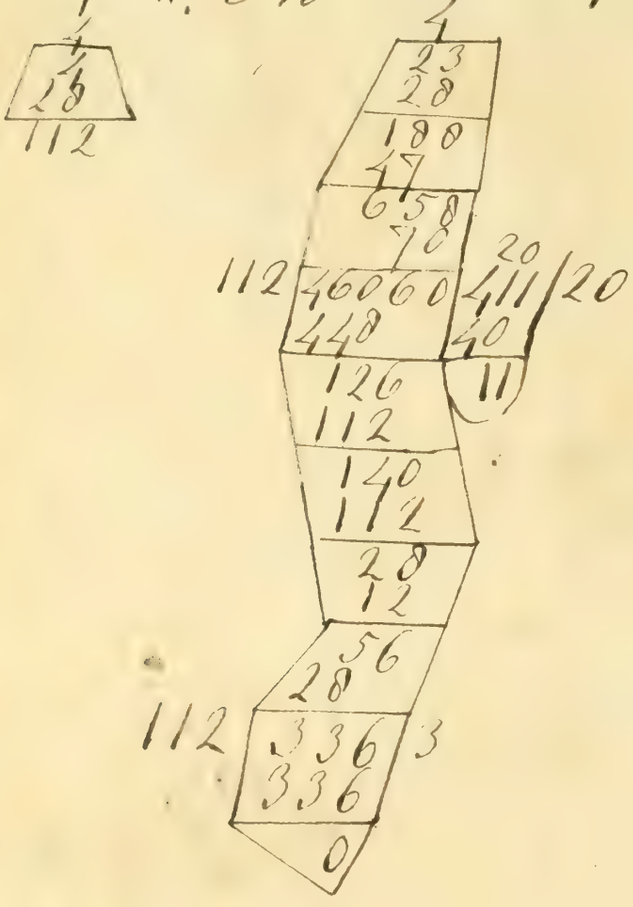
21	756	18 Canary
	63	
	126	
	126	
	0	

Of Barter.

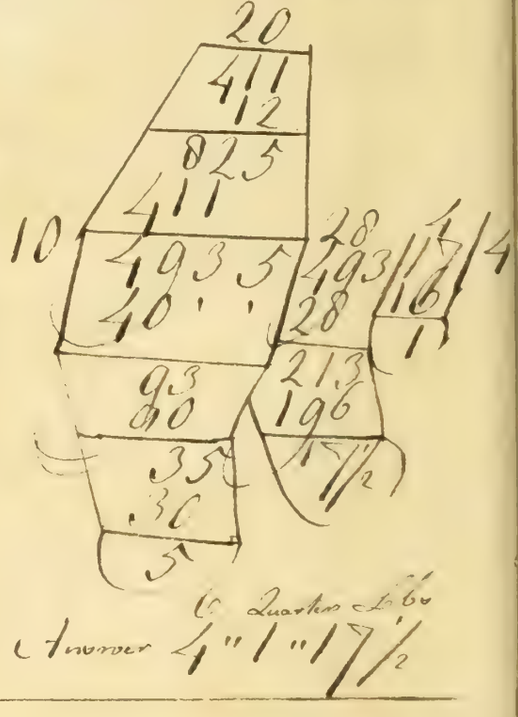
When Merchants or Tradesmen, exchange one Commodity for another, it is called Barter; & the only difficulty in this way of dealing, lies in the Due proportioning the Commodities to be exchanged; so, as that neither part sustain loss.

Two Merchants, A. and B. Barter; A. would exchange 5 C 2 qr 3 lb of Pepper, which is worth 3 l 10 s a Hundred, with B. for Cotton worth 10 d a pound weight; how much Cotton must B. give to A. for his Pepper?

1 l : 3 l 10 s : 5 C 3 qr 14 lb



10 l : 1 l : 20 l 11 s 3 d



C Quarters lb

Answer 4 l 1 s 17½ d

Two Merchants A and B Barter Thus; A hath 86 Yards of Broad Cloth worth 9s 2d a Yard, ready Money; but in Barter he will have 11s a Yard, B hath Shallon worth 2s 8d a Yard ready Money; 'tis required to find how many Yards of the Shallon B must give to A for his Cloth to make his gain in the Barter equal to that of A's?

9 : 2 :: 11 : 2 : 1
12 12
110 25 12
55 15
22
110 2 7 3 5 2
2 6 0
55
12
110 6 6 6 0 6
6 6 0
0

1 : 11 :: 86
86
66
88
20 9 4 6 47
8 8 0
1 4 6
1 2 0
6

2 : 6 :: 1 :: 47 : 6
12 46
30 9 4 6
1 2
1 0 9 2
9 4 6
30 1 1 3 5 2 3 7/8
9 0
2 3 5
2 1 0
2 5 2
2 4 0
1 2

Yards
3 7/8 Answer

A has 327 lb of butter worth 6/9 a pound, which he would barter with B, for wheat at 5s 8d per Bushel: how many Bushels must he have for his Butter?

1 : 6 : 9 :: 327
12
81
327
567
1627
2 4 3
12 2 6 4 8 7
2 4
24
24
87
87
3

11 : 3 :: 1 :: 110 : 7 : 3
12
25
11

20
220 7
10
77
220 7
135 2 6 4 8 7 106 Yards Answer
1 3 5
1 2 9 8
1 2 1 5
8 3 7
8 1 6
2 1

Practice.

Practice is a short way of finding the value of any quantity of Goods by the given price of one Integer.—

Tables.—

d		s	
6	is ½ of a Shilling	10	is ½ of a £
4	⅓	6"8	⅓
3	¼	5	¼
2	⅙	4	⅕
1½	⅛	3"4	⅙
1	1/12	2"6	⅛
		2"	1/10
		1"8	1/12

At 6 the yard what cost 640 yards of Tape?

2 | 640 | 320 | 16
6 | 4 | 0
4 | 4 |
0 |

2)640
2)320
£16 Answ.

At 3 p.r Lemmon what cost 473 Lemmons?

4)473
20 | 11 | 8-3
£5"0"3 Answ.

If what comes 344 yards of Lace at 4 p.r yard?

3)344
20 | 11 | 4-8
5"14"8 Answ.

At 1 p.r Apple what comes 876 apples to? Answ.

12)876
20 | 73
3"13 Answ.

At 1/2 the pint what cost 646 pints of milk?

At 2 the yard what cost 873? 8)646
8 | 0-9
4"0"9 Answ.

Practice

To what come 8 dozzen Buttons at 6 p.r Button?

3)96
4)32
24
20)£2"16 Ans.r

To what come 87 of beef at 4½ p.r pound?

4)87
21"9
10"10"2
£1"12"7"2 Ans.r

To what come 2lb.s 6 of flour at 11 p.r pound?

2)67
33"6
4 16"9
6 11"2
20)61"5
£3"1"5 Ans.r

To what come 2lb.s 87 of Butter at 9½ p.r pound?

2)87
43"6
6 14"6
8 10"10"2
20)68"10"2
£3"8"10"2 Ans.r

At 11"2 p.r pound what cost 87 Loaf: Sugar?

2)87
43"6
29"
10"10"2
£4"3"4"2 Ans.r

At 9.1/3 the Yard what cost 87 yards.

3 87
29"
3 29"
12 9"5
3"8"2
20 1"10"1
20)72"3"3
£3"12"3"3 Ans.r

To what come 69 yards at 5"6 p.r yard?

2)69
34"6
3 23
12 5"9
2"10"2
20 1"5"1
20)64"6"3
£3"7"6"3 Ans.r

Practice!

If what cost 111 yards of quality at 11s 5d yard?

2) 111
8) 55 " 6
1 | 27 " 9
8 | 13 " 10 " 2
10 | 6 " 11 " 1
20 | 1 | 4 " 0 " 3
5 " 4 " 0 " 3 Answ. 5£ 4s 0d

At 10s 3d a yard what cost 611 yards?

2) 611
4) 305 " 6
4 | 152 " 9
12 | 50 " 11
10 | 25 " 5 " 2
20 | 12 " 6 " 3
5 | 4 | 11 " 4 " 1
£ 27 " 7 " 4 " 1 Answ. 27£ 7s 4d

At 14d the yard what cost 617 yards?

6) 617
8 | 102 " 10
12 " 10 " 1
20 | 7 | 3 | 12 " 8 " 1
36 " 12 " 8 " 1 Answ. 36£ 12s 8d

If 16d the yard what cost 671 yards?

4) 671
12 | 167 " 9
5 " 11
20 | 27 " 11 " 2
10 | 13 " 11 " 3
2 | 9 | 3 | 6 " 7 " 1
46 " 16 " 7 " 1 Answ. 46£ 16s 7d

At 19½d a yard what cost 613 yards?

2) 613
8 | 306 " 6
16 " 7 " 2
20 | 9 | 9 | 6 " 1 " 2
2 | 9 " 16 " 1 " 2 Answ. 9£ 16s 1d 2q

Practice.

When the price of an integer is any even number of Shillings under 20. then Multiply the given Quantity by half of the price, & double the first figure of the product for Shillings, & the rest of the product will be Pounds.

Quest. If 1 yard of quality cost 6 what will 873 yards cost?

873
3
£261"10 Answ.

At 8 the yard what cost 609 yards.

609
4
£275"12 Answ.

At 18 the yard what cost 679 yards of broad cloth?

679
9
£611"2 Answ.

When the price of any integer is any odd number of Shillings under 20. then Multiply the given Quantity, by the given price, & divide that product by 20. & the Quotient will be the Answer.

At 17 the yard what cost 873 yds of broad cl[oth]

873
17
6153
873
20 14841 3
£741"3 Answ.

At 19 the yard what cost 678 yards?

678
19
6102
678
20 12882
£644"2 Answ.

Practice.

When the price of an integer is shillings & pence if they be the aliquot part of a pound it may be done at one [illegible]

Guess the price of 671 yards of cloth at 6/8 the yard?

3|671
£223 : 13 : 4 Ans

At 3/4 the Yard what cost 1782 yds?

6|1782
£297 Ans

At 1/8 the yard, what cost 789 yds?

12|789
£65 : 15 Ans

At 4/ the yard what cost 473 yds?

5|473
£94 : 12 Ans

At 6/ the yard what cost 746 yds?

4|746
£186 : 10 Ans

At 2/6 the Yard what cost 873 yards?

873
£109 : 2 : 6 Ans

At 2/ the yds what cost 387 yards?

10|387
£38 : 14 Ans

At 1/8 the pound what cost 197 pounds Wanson?

12|197
£16 : 8 : 4

Practice.

If the shillings & pence be not the aliquot parts of a pound; multiply the given Quantity by the shill^{gs} and take parts with the rest, & add them together; the sum will be the answer in shillings.

Ex^{t} 9/3 the yard; what cost 126 yards?

4	126	
	9	
	1134	
	31 " 6	
20	1165 " 6	
	£58 " 5 " 6	Ans^{r}

Ex^{t} 9 " 11 " 6 p^{r} yard what cost 1782 yards?

	1782	
	9	
	16038	
	891	
	594	
	£ 148 " 6	
	74 " 3	
	37 " 1 " 2	
20	17782 " 10 " 2	
	£889 " 2 " 10 " 2	Ans^{r}

Ex^{t} 1/ " 9 " 4 p^{r} yard what cost 7376 yards?

3	7376	
	1	
	5139	
	4432	
	12529	
4	2505 " 0	
8	1804 " 3	
	902 " 1 " 2	
20	451 " 0 " 3	
20	1309 " 1 " 1	
	£65 " 4 " 1 " 1	Ans^{r}

Practice

If the price of an integer be Pounds & Shillings then Multiply the given Quantity by the Pounds, & then proceed with the Shillings as above shewn, whether they be even or uneven.

At £3 6s 8d the Yard what cost 647 yards broad cloth?

3	647
	1941 £
	215 " 13 " 4
	£2156 " 13 " 4 Ans

At £7 3 4 per Acre what cost 67 acres of land?

6	67
	469 £
	11 " 3 " 4
	£480 3 " 4 Ans

At £9 1 0 the Acre what cost 731 Acres?

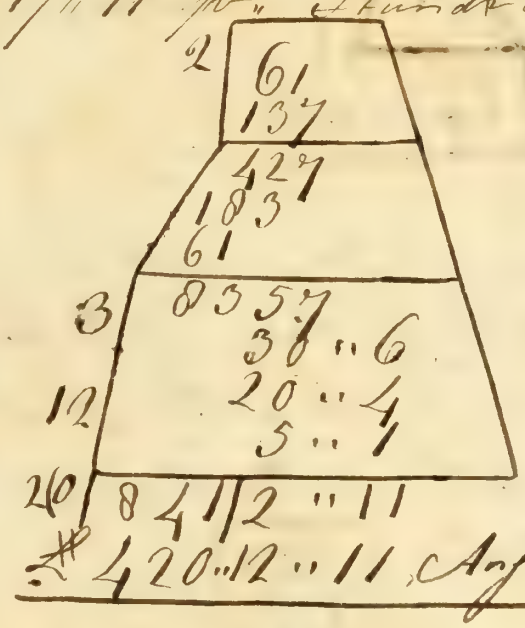
	731
	9
	6579
	60 " 18 " 4
	£6639 " 18 " 4 Ans

Practice

If the shillings & pence be not the Aliquot parts of a pound or if there be shillings & pence & farthings given with the pounds then reduce the pounds & shillings into shillings & Multiply the given integer by the said shillings since that part with the rest of the price & add them together as before

L

At 6 ll 17 ss 11 p^r^ Hundred what cost 61^c^ of sugar?

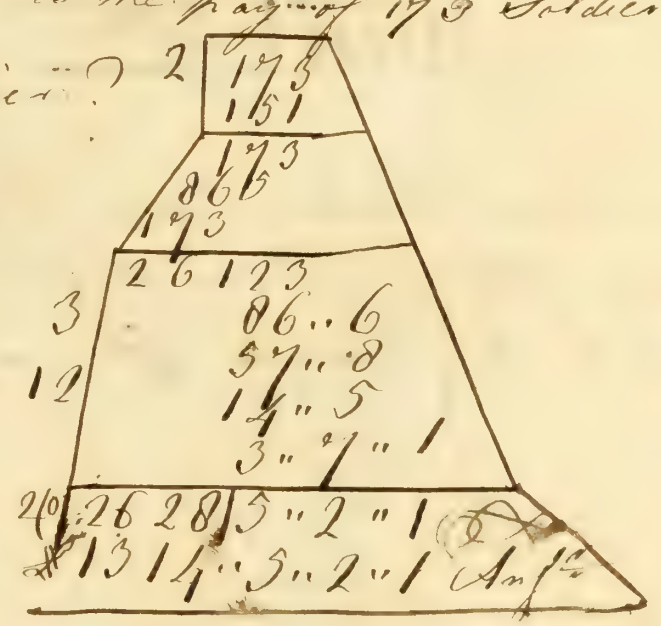


6 ll 17
20
137

L

At what comes the pay ll of 173 Soldiers at 7 ll 11 ll 11 ll 1

p^r^ Soldier?

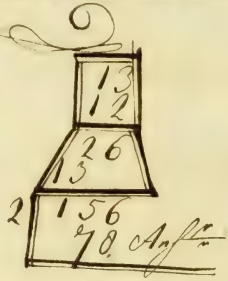


20
151

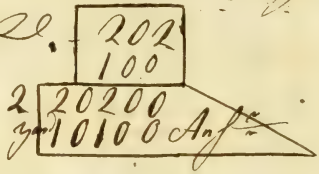
Arithmetical Progression

Multiply the sum of the two extreams into the number of all the terms; & Divide the product by 2. The quotient will be the sum of all that series.

'Tis required to find the Number of all the strokes a clock strikes in one whole revolution of the index, Viz.t twelve hours.



Suppose 100 eggs were placed in a right line a Yard distant from each other; & the first was a Yard from a Basket; how far must a Man run to gather up all those eggs singly one after another still returning with every egg to the Basket.



The Difference betwixt the two extreams, being Divided by the Number of terms less an Unit or 1. The Quotient will be the common Difference of the series.

Progressions

A Man is to Travel from Brookline to a certain place in ten Days, & to go but two Miles the first Day, encreasing every Days Journey by an equal Excess, so that the last days journey may be Twenty Nine Miles, what will each Days Journey be, & how many Miles is the place he goes to, Distant from Brookline

29
2
31
10
2 310
155 Miles Distant from Brookline

155
2
9 1557
1744

29
2
9 2613

first	3
Second	5
Third	8
Fourth	11
Fifth	14
Sixth	17
Seventh	20
Eighth	23
Ninth	26
Tenth	29

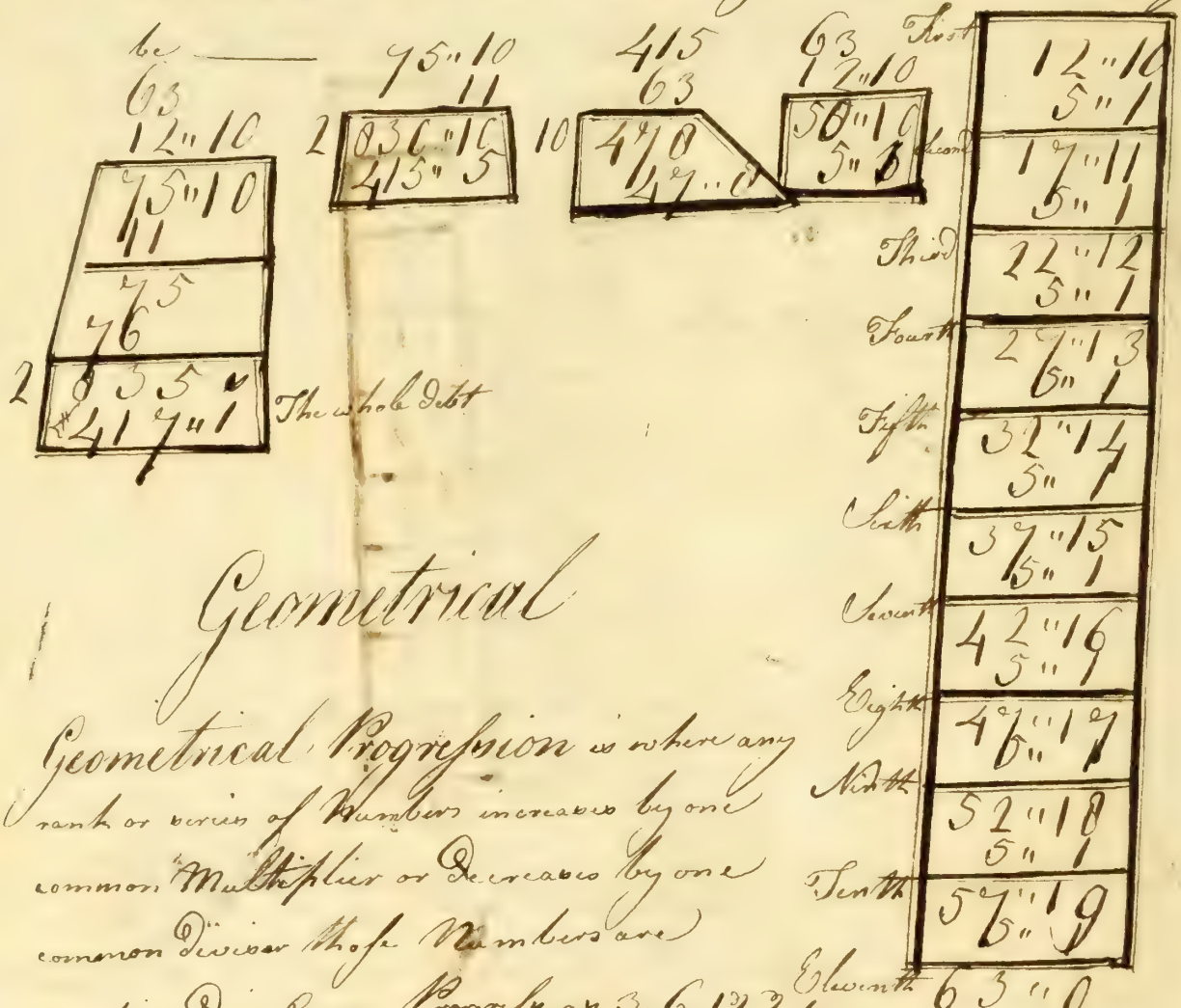
One had twelve Children that differed alike in all their ages, the Youngest was nine years Old, the Eldest was 36½, what was the the Difference of their ages, & the age of each

36½
9
11 27½
2½

First	9
Second	11½
Third	14
Fourth	16½
Fifth	19
Sixth	21½
Seventh	24
Eighth	26½
Ninth	29
Tenth	31½
Eleventh	34
Twelfth	36½

Progression

A Debt is to be discharged at 11 several payments in arithmetica
progression the first payment to be £12 "10 & the last
£63 what is the whole debt & what must each payment



Geometrical

Geometrical Progression is where any rank or series of Numbers increases by one common Multiplier or decreases by one common Divisor those Numbers are continued in Geom, Progress as 3. 6. 12. 24. increase by the Multiplier 2. & 3. 24. 12. 6. 3 decrease by the Divisor 2

When all the terms alone are given then from the product of the Second & last terms Subtract the Square of the first term, that remainder being divided by the Second Term less the first will give the sum of all the terms,

When the Extream & the Ratio are only given then Multiply the last term into the Ratio & from that product Subtract the first term, that remainder divide by the Ratio less an Unit or 1 the quotient is the sum of all the terms ——

Progressions

A Man bought a horse, & by agreament was to give a farthing for the first Nail, two for the Second, four for the Third, &c, there were four Shoes, & 8 Nails in each shoe; I demand what the horse was worth at that rate?

2147836482

		£	s	d	q
	429496°1296 1				
4	429496°1295 3				
12	107374182311 3				
	8947848511 3				
20	447392411 5				
		447392	5	3	3 Ans

A Merchant sold 15 Yards of Satin the 1st Yard for 1 shilling & the Second Yard for 2 the Third for 4 & the fourth for 8 &c I demand the price of the 15 Yards?

16384

		£	s	d
	32768 1			
20	32767 1638 11 7			
		1638	11	7 Ans

A Merchant sold 20 Yards of superfine cloth the first Yard for 1/3 the Second for 1/9 the third for 2 17 & in triple proportion gone; I demand the price of the cloth?

11622646613

		£	s	d	q
	3486°1844°1 9				
6	3138105960 9				
	523501°660 1 11 3				
12	43584805011 1				
20	£2179240211 10				
		21792402	10	1	3 Ans

Progressions

A Crafty Servant agreed with a farmer to serve him 12 Years, & to have no thing for his service but the produce of a wheat Corn for the first Year; & that product to be sowed for the Second Year, & so on from Year to Year, until the end of the said time, I demand the worth of the whole product, supposing the increase to be Cutten a triple proportion & sold at 4/ p.r Bushel?

1000000000
10
10000000000
1
9 999999999999
680 111111111111
64 16339069
255312
4
20 10212740
£.51062

£
51062 Ans.r

A Thresher worked 20 Days at a farmers & received for the first Days work 4 barley Corns; for the Second 12; for the third, 36; & so on in triple proportion Given; I demand what the 20 days labour came to supposing the whole quantity to be sold for 2/3 p.r Bushel?

1549681956
3
46490458688
12
557885496836
48490458688
8 5577005530416
7680 69735688804
64 9001076
14107
36
12 425610
20 35467..6
1773..7

L ..
1773..7..6 Ans.r

The Rule of False.

To find the Number sought.

Suppose any Number & work with it as if it was the true one in the same proportion as the Question directs & if the result be either too much or too little the true Number may be found out by the following rule Viz.—

As the result of the Position
To the Position
So is the given Number
To any Number required.

A School Master being asked how many Scholars he had answered If I had as many & as many ¼ as many I should have 99 how many had he?

28
28
¼
7
17 ——— 28 ——— 99
99
792
28
17 | 772
36 Scholars

36
36
18
9
99 Proof

A person having about him a certain Number of crowns, said if the ½ ⅓ ¼ of them were added together they would make 65 Crowns, I demand how many he had?

12
6
4
3
13 ——— 12 ——— 65
½
130
65
13 | 100
60 Crowns sought

60
30
20
15
65 Proof

Continued.

One man carrying a bag of money in his hand, another asked him, (another asked him) how much was in it; he answered, he could not tell, but the 1/3. 1/4 & 1/5 of it made 91. how much was in the bag.

60 20
30 15
12
---
47 — 60 — 94

120 40
60 30
24
---
94 Proof

60
47 | 2820 (60 Anſ
282

0

The double Rule of False.

In this Rule two Suppositions are made use of— the results or Errors must be placed against their positions or Supposed Numbers, then Multiply them crosswise. then if the Errors are alike, take their difference for a Divisor & the difference of the products for a dividend—— but if the Errors are unlike then take the sum of the errors for a Divisor & the sum of the product for a Dividend, & the Quotient will be the anſ.

Good Morrow good fellow with your 20 Geese, nay but I have not 20 but if I had as many half as many & 1/2 to 2/2 geese, then I should have 20 how many had he

12 10
12 10
6 5
2/2 2/2

32/2 21/2

12 = 12/2
10 = 7/2
---
125 — 90
5

5 | 35 (7 Geese Anſ
35

0

Continued

A Stealing Apples was met by B, & to appease him gave him half he had, & B, gave him 4 back 8; then going on further he met C, & to appease him gave him half he then had, & C gave him back 5; & then going on he met D, & gave him half that he then had, & D gave him back 1; & getting home he had 13 left; I demand how many he had at first?

84 — 3
100 — 5
300 — 420
2 | 120 | 2
60 Apples Ans.

Proof

A, B, & C would divide 100 between them so as that B may have 3 more than A, & C 5 more than B; I demand how much each Man must have?

20 — 30
25 — 15
750 — 300
15 | 450 | 30 | 15
25
0

30 A's Part
35 B's Part
35 C's Part
100 Proof

A Man lying at the point of death, sent for his Children & gave them 100 which he bequeathed to them & his friends after this Manner; The first must have a certain portion; the Second must have twice as much as the first wanting 2 & the third must have three times as much as the first wanting wanting 15: I demand how much each Man must have?

10	15	10 —— 63
12	21	15 —— 33
15	30	945 —— 330
37	61	30

30 | 615 | 20 — 15 | 20 | 30 | 300 | 10

20 ‖ 10 first
33 ‖ 0 Second
46 ‖ 10 Third
100 ‖ 0 Proof

Three persons discoursed together concerning their Ages; says A: I am 20 years of age; says B, I am as old again as A, & half as old as C; says C I am as old as you both: I demand the age of each person?

30	32	30 —— 25
35	36	32 —— 24
20	20	800 —— 720
55	56	1

1 | 80 | 80

20	A:
60	B:
80	C:

Continued

A Man lying at the point of Death left to his 3 Sons all his estate in Money, Viz. to A. half wanting 30, to G. one Third; & to H. the rest, which was 10 £ less than the share of G; I demand the sum left, & each Mans part?—

120 — 10, 40, 30 — 80

150 — 25, 50, 40 — 115

120 ——— 40
115 ——— 35
6000 ——— 4100
5

1000
360

360 — 130 part, 120 Second, 110 Third — 360

A Certain Man having drove his swine to the Market Viz. Hogs, Sows, & Pigs, received for them all 50 £ being for every Hog 18/ for every Sow 16/ for every Pig 2/ there were as many Hogs as Sows & for every Sow there were three Pigs; I demand how many there were of each sort?—

20, 18 — 160, 20 — 360, 320, 120 — 800 — 40

18, 18 — 144, 288 — 414, 288, 138 — 920 — 46

20 ——— 16
23 ——— 4
230 ——— 80
6

6 | 150 — 25

25 Hogs
23 Sows
7 Pigs

Column 2.

A Lady of Note following being demanded the Ages of her five Children, answered, you may go & look, but if you must needs know, my first son was born just one year after I was Married to his Father, who after his Birth lived 5 years, & then died in childbed with my second son: 4 years after that, I Married again & within 2 years had my third & fourth at a birth, the sum of whose two Ages is now equal to that of the Eldest, I demand their several Ages? ——— Ans. Ages of the Children

10	20	10 ------ 1	Of the Eldest	21
10	10	20 ------ 9	Of the Second	16
21	1	20 ------ 90	Of the Youngest	11
20	10			

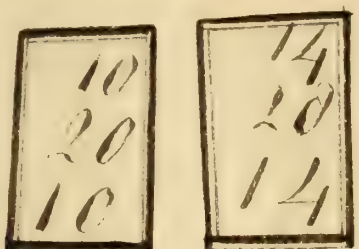
10 | 110 | 11
10
10
10

A Merchant being demanded how old the new Governour was, said, I have 9 children, & there are three years between the birth of each of them; the Eldest was born when I was 19 years old, which is now exactly the age of the youngest; how old was the Governour?

1	10	27 ------ 16	43
1	2	30 ------ 13	19
1	1	400 ------ 351	62 Years Age
1	0		
1	9	13	19
1	8	13	3.
1	7	9	
1	6		
1	5		
1	4		
1	3		
1	2		
1	1		
1	0		
9	9		
8	8		
7	7		
6	6		
5	5		
4	4		
3	3		
2	2		

Continued

A Gentleman a Chaire did buy,
Of Horse & Harneſs too,
They coſt the ſum of Thirty one Pound;
Upon my word 'tis true;
The Harneſs came to half of the Horſe,
The Horſe twice of the Chaiſe:
Tell if you find the price of them,
Pray then & go your way?



10 ------ 20
14 ------ 4
280 ------ 40

16 240 15
16
80
80

16

The price of the 1. 5 Chaiſe
Of the 30 Horſe
Of the 1. 5 Harneſs

Of Exchanging Coins.

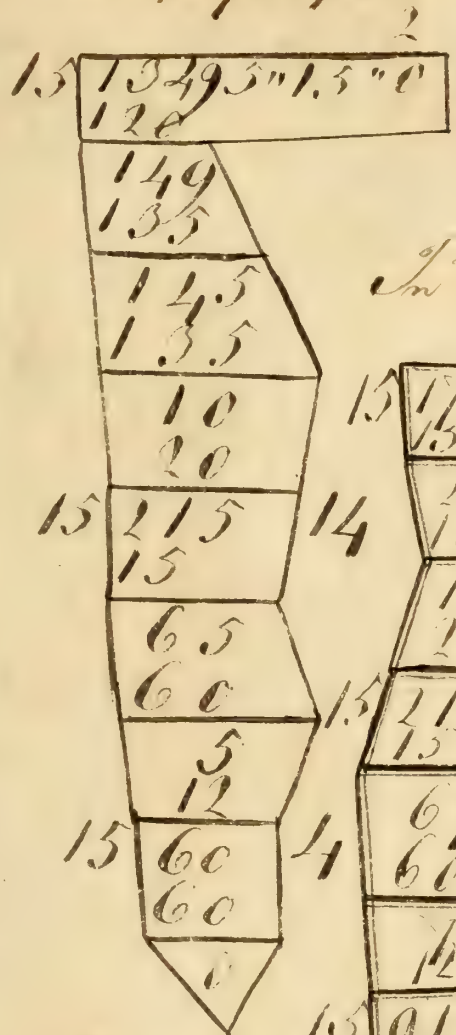
Exchanging the Coins of one Country for ~~another~~ those of another will be the Business of Barthing commutation. That is, it consists in finding what sum of another Country Coin will be equal in value to any proposed sum of another Country Coin. And in order to perform that, it will be very necessary to have a true account at all times of the just Value of the Foreign Coins which are to be exchanged, as they are compared with the Coin

Foreign Coins		Sterling Coin
French Coins.	1 Denier =	0 · 0 · 0 $\frac{3}{4}$
	12 Deniers = 1 Souly =	0 · 0 · 0 $\frac{9}{16}$
	20 Soulys = 1 Livre =	0 · 1 · 6
	3 Livres = 1 Crown =	0 · 4 · 6
Low Country Coin.	1 Stiver =	0 · 0 · 1 $\frac{1}{5}$
	1 Stivers = 1 Flemish Shilling =	0 · 0 · 7 $\frac{1}{5}$
	20 Stivers = 1 Gilder =	0 · 2 · 0
	10 Gilders = 33 $\frac{1}{3}$ Shillings = 1 Pound of Flemish Money	1 · 0 · 0
Coins of Italy	1 Quattrin Soldo =	0 · 0 · 0 $\frac{1}{3}$
	1 Sesin Soldo =	0 · 0 · 1 $\frac{1}{3}$
	1 Italian Soldo =	0 · 0 · 4
	1 Papal Soldo =	0 · 0 · 6
	1 Venice Soldo =	0 · 0 · 8
	1 Piece of Eight =	0 · 4 · 3 $\frac{3}{7}$
Coins of Germany	1 Rix Dollar of the Empire =	0 · 4 · 5 $\frac{1}{7}$
	1 Gilder of Nuremberg =	0 · 4 · 1
	1 Rix Dollar at Leghorn =	0 · 0 · 9
	1 Florin Crown Courrant =	0 · 5 · 3
Coins of Holland and Flanders	1 Ducat of Utrecht =	0 · 4 · 4
	1 Ducat of Groningen =	0 · 4 · 4
	1 Ducat of Friesland =	0 · 5 · 6
	1 Ducat of Zeeland =	0 · 5 · 6 $\frac{1}{4}$
	1 Ducat of Barcelona =	0 · 6 · 0
	1 Ducat of Cadiz =	0 · 5 · 3
	1 Ducat of Bergen =	0 · 4 · 1
	1 Ducat of Portugal =	0 · 4 · 3
	1 Piece of [illegible] =	0 · 4 · 6

How to change old Sterl. into L. Money & the contrary.

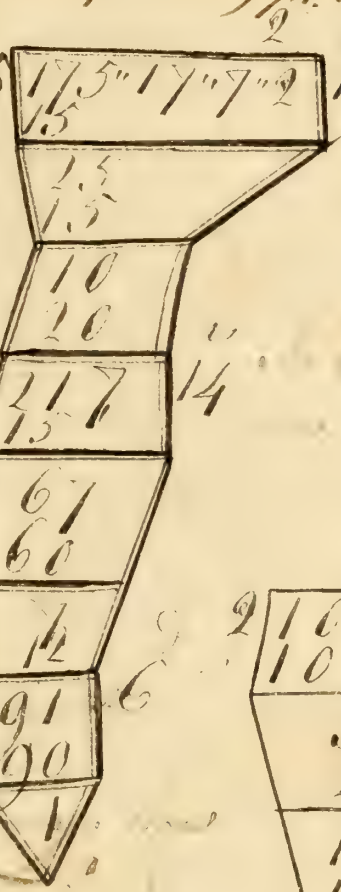
To bring old sterl. into L. money; Multiply the sum by 2 and divide the product by 15 and the Quotient will be the Answer.

Exa. In 6747 ℔ 17 ʃ 6 d old sterl. how much L money?

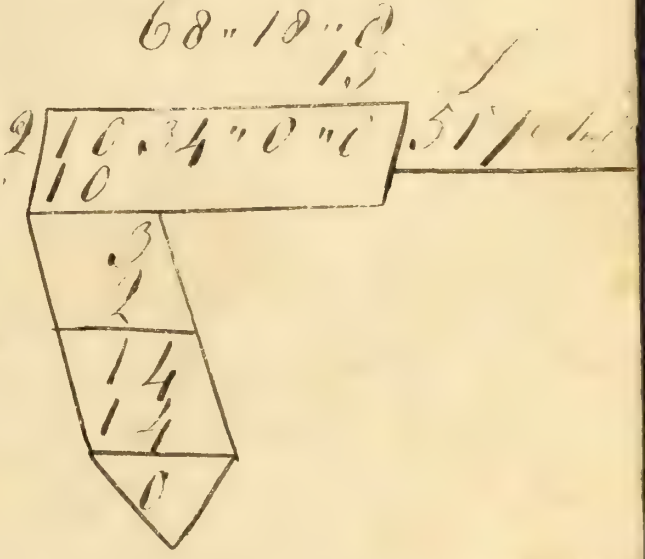


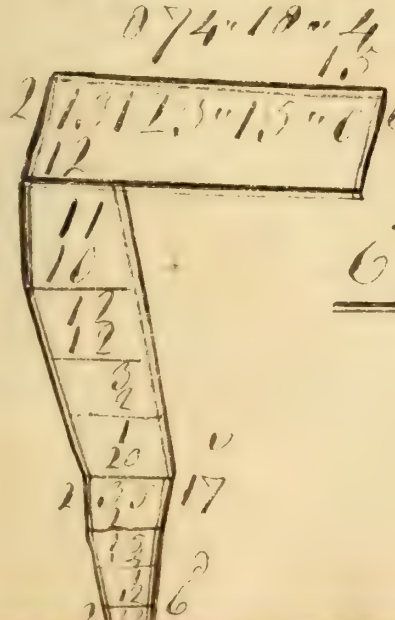
899 ℔ 14 ʃ 4 d Ans.

In 87 ℔ 18 ʃ 9 3/4 d old sterl. how much L M.

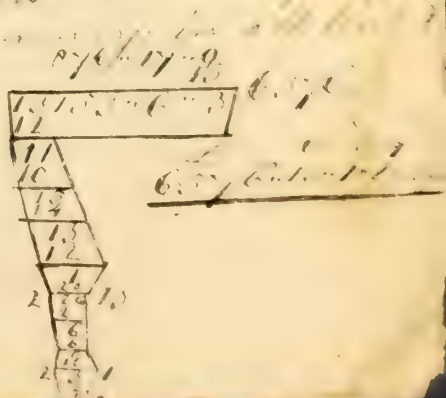


11 ℔ 14 ʃ 6 d Ans.





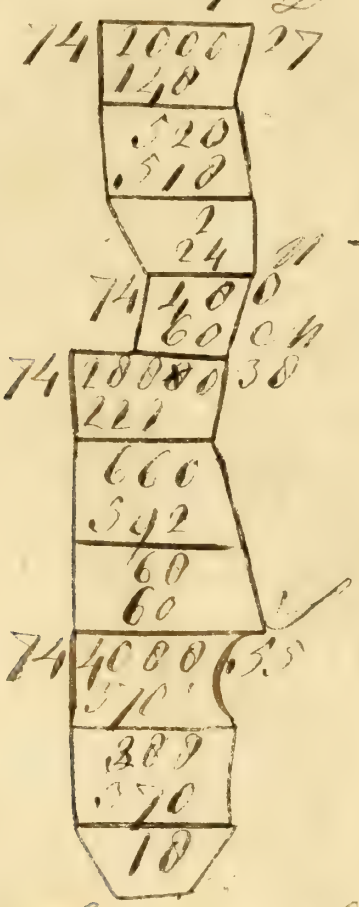
6361 ℔ 17 ʃ 6 d Ans.



Practical Questions for Exercise.

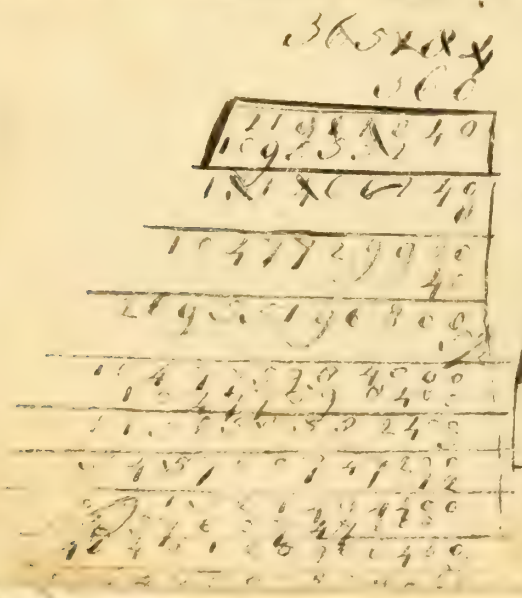
Suppose two men should set out at the same time to travel. One should travel 66 miles a day South, & the other 20 miles a day North: How long will each have travelled, when they are just 2000 miles apart?

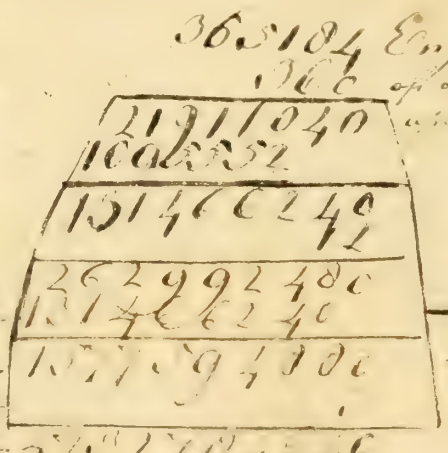
74 ——— 1 ——— 2000 D



D H m S
27 0 38 350 Ans

Supposing the Circumference of the Earth to be 360 Degrees; how many barley corns would reach round it, ?



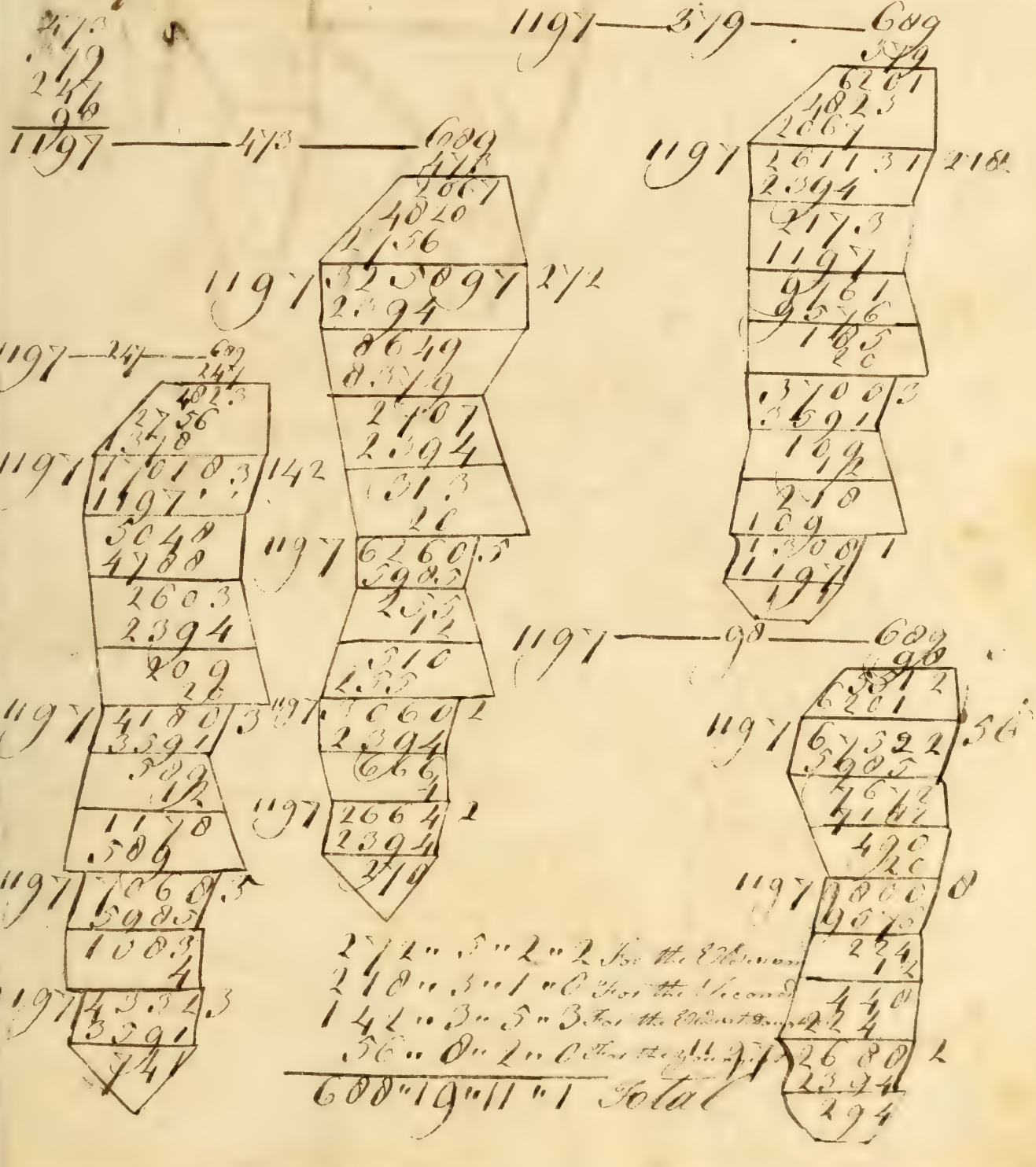


English. The tare the measure of one degree of a great circle upon the surface of the earth

Barley Corns
47520480 Ans.

Practical Questions for Exercise.

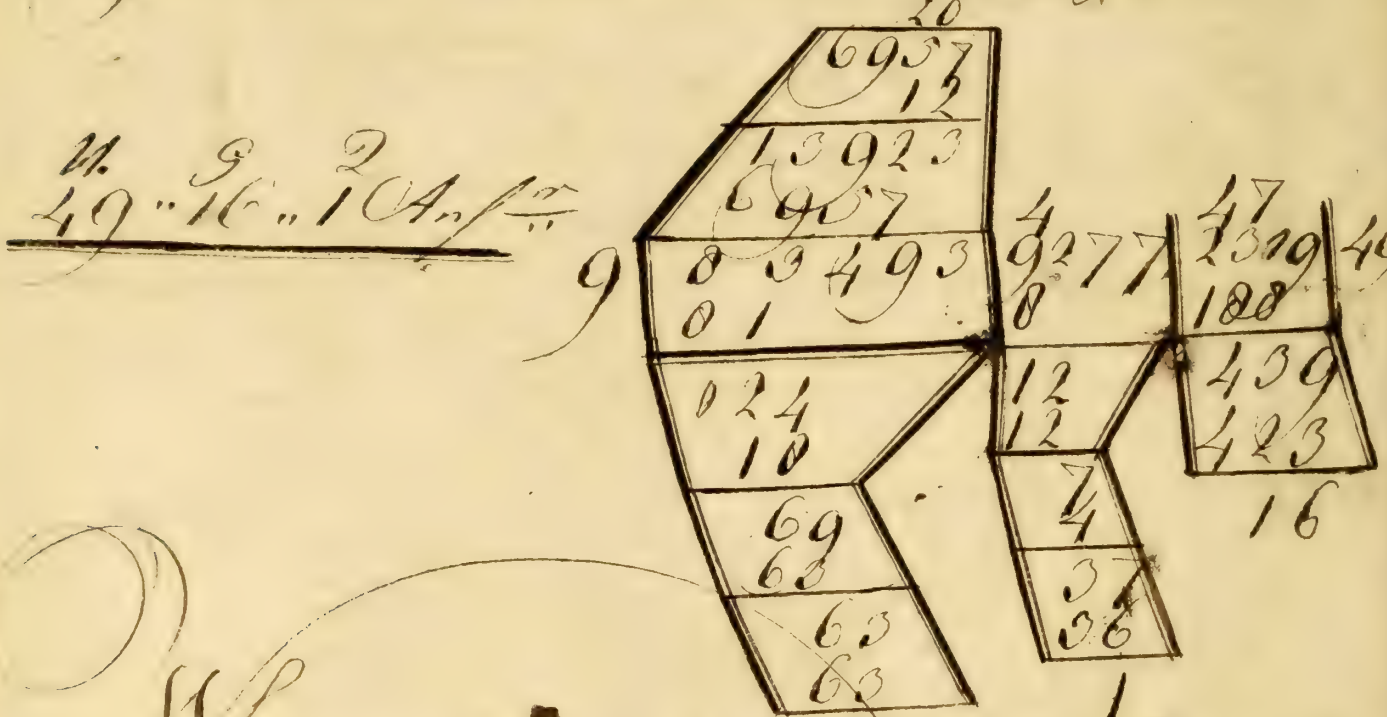
A Gentleman dying bequeathed his Estate to his four Children in the manner following (Viz.t) To his eldest son 478. To his second son 279 — To his eldest daughter 147. To his youngest 98. After his death his estate was found to be worth but 609. The question is, how much each must have according to what was bequeathed to them?



Practical Questions continued

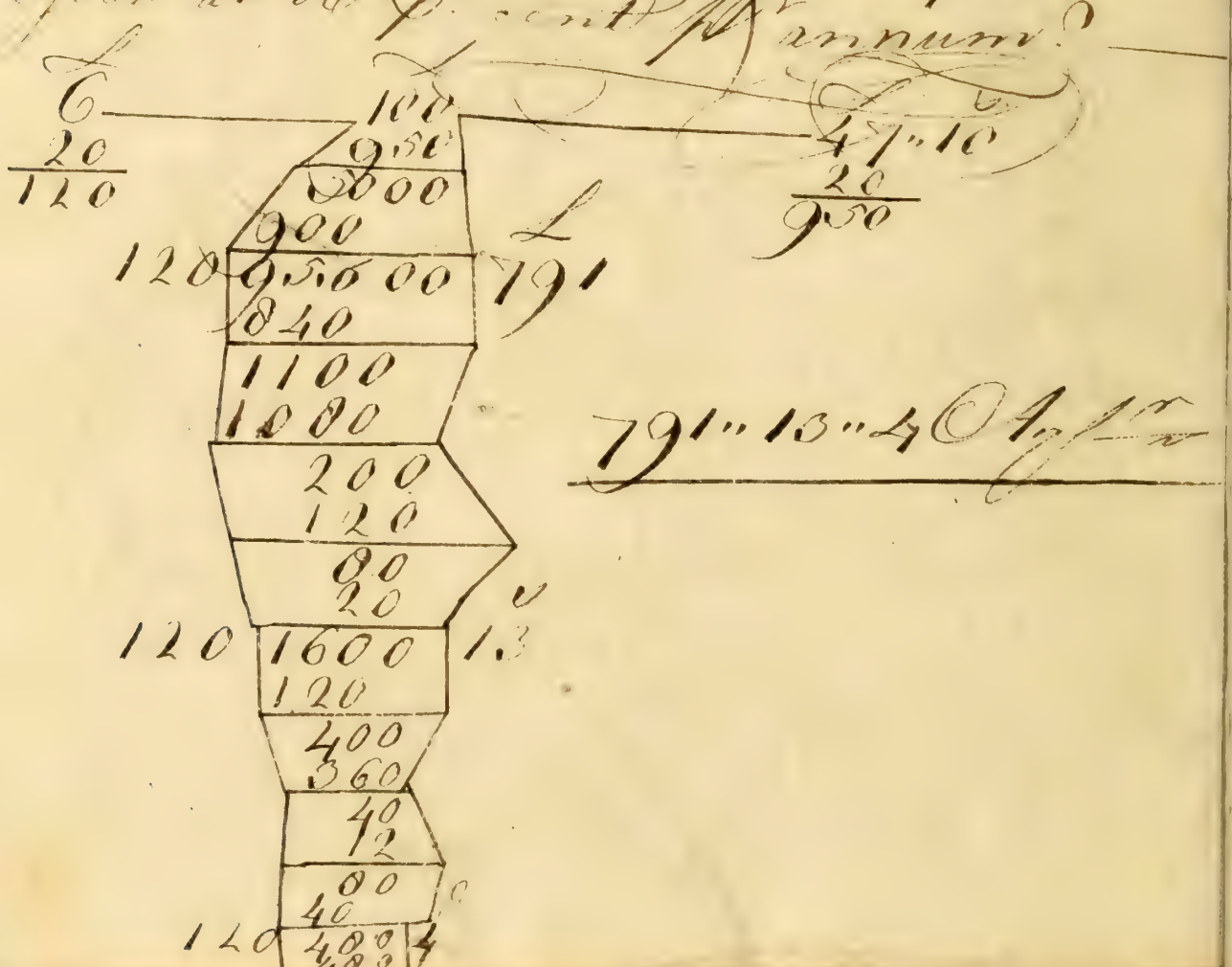
How many Hogsheads of wine each containing 63 gallons, may be bought with £347 17s 9d at the rate of 9d per quart?

9 —— 1 —— 347 17 9



11 9 2
49 16 1 Ans

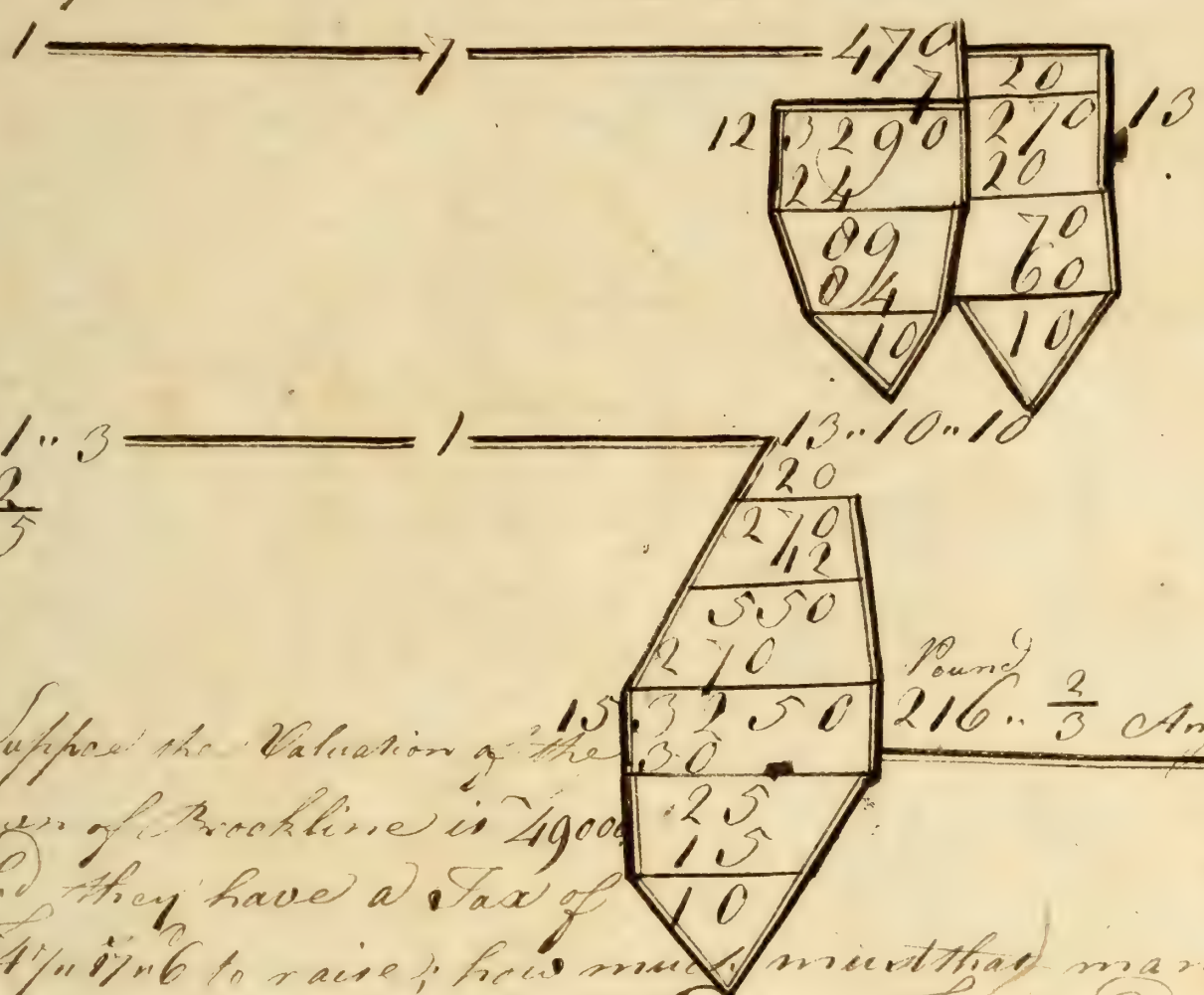
What sum of money will gain £47 16 in a year at 6d per cent per annum?



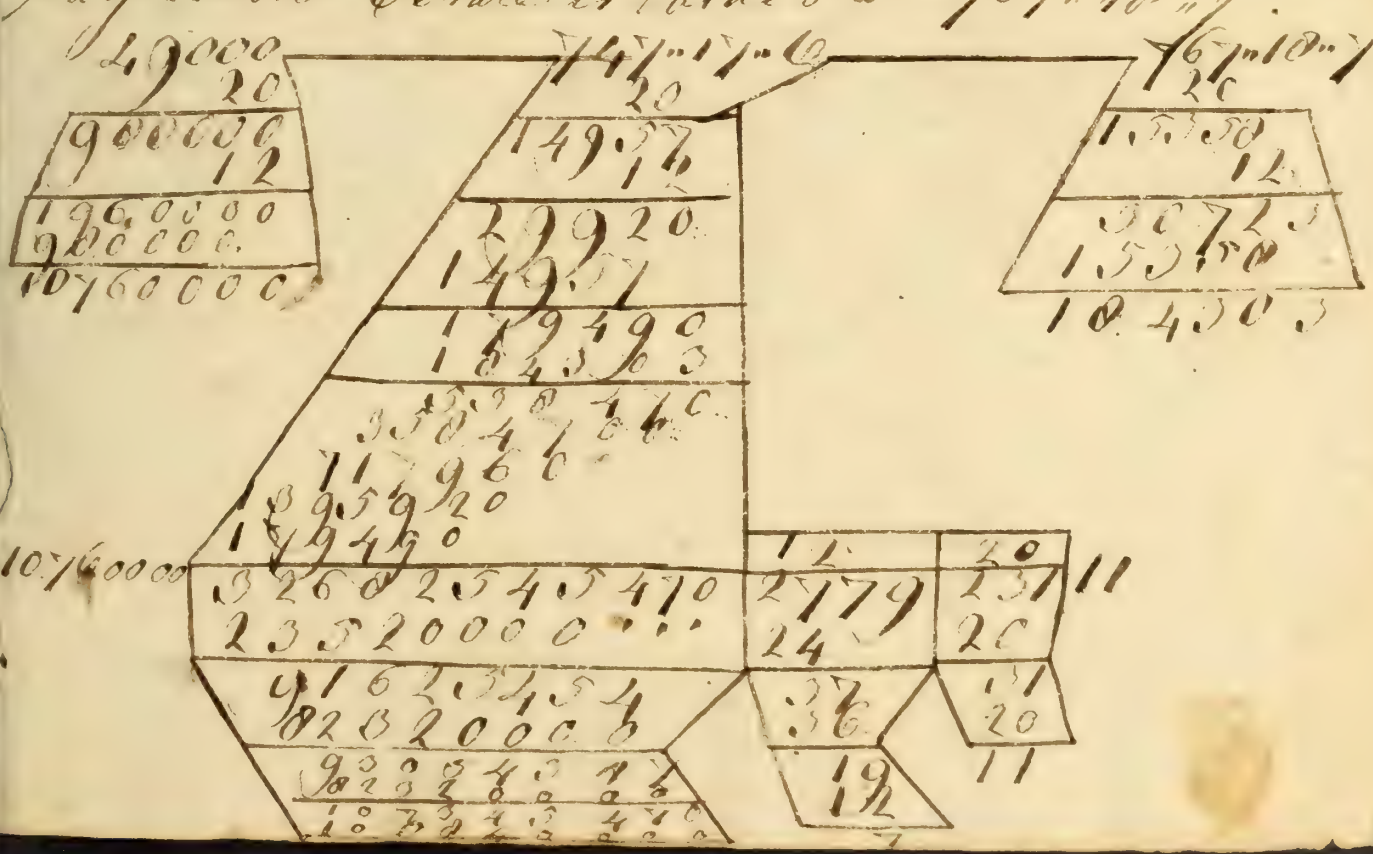
791 13 4 Ans £

Continued.

If you have 4/5 of a cargo worth 7 1/2 pounds how much better must you have for it valued at 7/3 the pound?



Suppose the Valuation of the Town of Brookline is 49000 and they have a Tax of 747 : 17 : 6 to raise, how much must that man pay whose Estate is valued at 767 : 10 : 7?



Vulgar Fractions.

Sect. 1. Of Solution.

A Fraction, Or Broken Number, is that which represents a Part or Parts of anything proposed (vide Page 3.) and is expressed by two Numbers placed one above the other with a line drawn betwixt them:

Thus $\frac{3}{4}$ { Numerator / Denominator

The Denominator or Number placed underneath the Line denotes how many Equal Parts the Thing is supposed to be Divided into (being only the Divisor in Division.) and the Numerator or Number placed above the Line; shews how many of those Parts are contained in the Fraction (it being the remainder after Division.) (See Page 29.) And these admit of three Distinctions:

Viz. { Proper or Simple / Improper / Compound } Fractions

A Proper, Pure, or Simple Fraction, is that which is less than an Unit. That is, it represents the Immediate Part or Parts of any thing less than the whole, and therefore its Numerator is always less than the Denominator.

As { $\frac{1}{4}$ One Fourth Part / $\frac{1}{3}$ One Third Part } And { $\frac{1}{2}$ One Half / $\frac{2}{3}$ Two Thirds &c.

An Improper Fraction is that which is greater than an Unit. That is, it represents some Number of Parts greater than the whole Thing; And its Numerator is always greater than the Denominator.

As $\frac{5}{3}$ Or $\frac{2}{1}$ Or $\frac{41}{16}$ &c.

A Compound Fraction is a Part of a Part, consisting of several Numerators and Denominators connected together with the word [of].

As $\frac{1}{3}$ of $\frac{3}{4}$ of $\frac{1}{3}$, &c. and are thus read, The one Third of Three Fourths Of the Two Fifths of an Unit.

That is, when a Unit (or whole Thing) is first Divided into many

Number of Equal Parts, and each of those Parts are Subdivided into other Parts, and so on: Then those last Parts are called Compound Fractions, or Fractions of Fractions.

As for Instance, suppose a Pound Sterling (or £) be the Unit or whole; then is 8ˢ the $\frac{2}{5}$ of it and 6ˢ the $\frac{3}{4}$ of those Two fifths, and 2ˢ is the $\frac{1}{3}$ of those three fourths. Viz 2ˢ. $\frac{1}{3}$ = of $\frac{3}{4}$ of $\frac{2}{5}$ of one Pound Sterling.

All Compound Fractions are reduced to single ones, Thus,

Rule

Multiply all the Numerators into one another for a Numerator, and all the Denominators into one another for the Denominator.

Thus the $\frac{1}{3}$ of $\frac{3}{4}$ of $\frac{2}{5}$ will become $\frac{6}{60}$. Or $\frac{1}{10}$.

For 1×3×2 = 6 the Numerator, & 3×4×5 = 60 the Denominator, but $\frac{6}{60}$ or $\frac{1}{10}$ of a Pound Sterling is 2ˢ. As above.

Sect 2. To alter or Change different Fractions into one Denomination retaining to the same Value.

In order to gain a clear Understanding of this Section, it must be convenient to premise this Proposition, Viz. If a Number Multiplying Two other Numbers produce other Numbers, the Numbers Produced of them shall be in the same Ratio that the Numbers Multiplied are, (7 Euclid 7).

That is to say, If both the Numerator and Denominator of any Fraction be Equally Multiplied into any other Numbers their Products will retain the same value with that Fraction.

As in these, $\frac{2\times1}{3\times2} = \frac{4}{6}$ Or $\frac{2\times3}{3\times3} = \frac{6}{9}$. Or $\frac{2\times5}{3\times5} = \frac{10}{15}$. &c.

That is, $\frac{2}{3}$ and $\frac{4}{6}$. Or $\frac{2}{3}$ and $\frac{6}{9}$. Or $\frac{2}{3}$ and $\frac{10}{15}$ are of the same value in respect to the whole or Unit.

From hence it will be easy to conceive how Two, or more Fractions that are of Different Denominations, may be altered or Changed into others that shall have one common Denomination and still retain the same value.

Example. Let it be required to change $\frac{2}{3}$ and $\frac{3}{7}$ into two other Fractions that shall have one common Denominator, and yet retain the same values

According to the foregoing Proposition, if $\frac{2}{3}$ be Equally Multiplied with 7, it will become $\frac{14}{21}$ Viz. $\frac{2\times7}{3\times7}=\frac{14}{21}$.
Again, if $\frac{3}{7}$ be Equally Multiplied with 3, it will become $\frac{9}{21}$ Viz. $\frac{3\times3}{7\times3}=\frac{9}{21}$. And by this means I have obtained two new Fractions $\frac{14}{21}$ and $\frac{9}{21}$ that have one Denomination, and the same values with the two first proposed Viz $\frac{14}{21}=\frac{2}{3}$ and $\frac{9}{21}=\frac{3}{7}$

And from hence do arise the General Rule for bringing all Fractions into one Denomination.

Rule

Multiply all the Denominators into each other for a New (and Common) Denominator. And each Numerator into all the Denominators but its own, for new Numerators.

Example. Let the proposed Fractions be $\frac{1}{3}$ $\frac{2}{5}$ $\frac{3}{4}$ and $\frac{6}{7}$.

Then by the Rule

A new Denominator will be thus found.

3
5
12
4
60
7
420

And the new Numerators will be thus found.

1.	2.	3.	6.
5	3	3	3
4	6	9	18
20	4	5	5
7	7	7	7
140.	168.	315.	360.

Hence 420 is the common Denominator; And 140. 168. 315. 360. are the new Numerators, which being placed Fraction-wise are $\frac{140}{420}$. $\frac{168}{420}$. $\frac{315}{420}$. $\frac{360}{420}$. The new Fractions required.

That is. $\frac{140}{420}=\frac{1}{3}$. $\frac{168}{420}=\frac{2}{5}$. $\frac{315}{420}=\frac{3}{4}$. and $\frac{360}{420}=\frac{6}{7}$.

Sect. 3. To bring mix'd & Denominate Fractions, and the contrary.

Mix'd Numbers are brought into improper Fractions by the following Rule.

Rule.

Multiply the Integers or whole Numbers with the Denominator of the given Fraction, and to their Product Add the Numerator, the sum will be the Numerator of the Fraction required.

Example. $9\frac{4}{5}$ by the rule will become $\frac{49}{5}$. For $9 \times 5 = \frac{45}{5}$.
And, $\frac{45}{5} + \frac{4}{5} = \frac{49}{5}$ the improper Fraction required.
Again, $13\frac{11}{15}$ will become $\frac{206}{15}$. For $13 \times 15 = \frac{195}{15}$.
And $\frac{195}{15} + \frac{11}{15} = \frac{206}{15}$. And so for any other like occasion requires.

To find the true Value of any improper Fraction given is only the Converse of this Rule. For if $\frac{49}{5} = 9\frac{4}{5}$ as before is Evident: Then it follows that 49 be divided by 5 the quotient will give $9\frac{4}{5}$ and if 206 be divided by 15 it will give $13\frac{11}{15}$ &c. consequently it follows, that

If the Numerator of any improper Fraction be divided by its Denominator, the Quotient will discover the true value of that Fraction.

Examples

$\frac{35}{7} = 5$. And $\frac{41}{9} = 4\frac{5}{9}$. And $\frac{121}{20} = 6\frac{1}{20}$. Or $\frac{15}{4} = 3\frac{3}{4}$. &c.

When whole Numbers are to be expressed Fraction-wise, it is but giving them an Unit for a Denominator. Thus 4 is $\frac{4}{1}$. 9 is $\frac{9}{1}$ and 25 is $\frac{25}{1}$ &c.

Sect. 4. To Abbreviate or Reduce Fractions into their Lowest or Least Denomination.

This is done, not out of any Necessity, but for the more convenient managing of Fractions whose either proposed in large Terms, or will in to such, either by Addition or otherwise: Besides it is most like an Artist to express or set down all Fractions in the lowest terms possible; and to perform that, it will be necessary to consider of the following Propositions.

Numbers are either Prime or Compound.

1. A Prime Number is that which can only be Measured by an Unit. Euclid 7. Defin. 11.

That is, 3. 5. 7. 11. 13. 17. &c. are said to be Prime Numbers, because it is not possible to Divide them into Equal Parts by any other Number but Unity or One.

2. Numbers Prime to one to the Other, are such as are Measured by an Unit only the Measure being their common Measure. Euclid 7. Defin. 12.

For Instance, 7 and 13 are Prime Numbers to each other, because they cannot be divided by any Number but an Unit. And 9 and 14 are also Prime Numbers to each other, for although 3 will Measure or Divide 9 without leaving a remainder, yet 3 will not Measure 14 without leaving a Remainder.

& Again a the 2 will Measure 14 without any Remainder, Yet 2 will not Measure 9 without leaving a Remainder, &c.

3. A Compoved Number is that which some certain Number Measureth. Euclid 7. Defin 13.

For Instance 15 is a Compoved Number of 3 and 5, for 3 X 5 = 15, consequently 3 or 5 will just by Measure 15. & so 20 is compoved of 5 and 4, Viz. 5 X 4 = 20, therefore 5 and 4 will each just by Measure 20.

4. Numbers compoved the one to the other, are they which some Number being a common Measure to them both to it Measure. Euclid 7. Defin 14.

That is, If Two or more Numbers can be Divided by one and the same Divisor; then are those Numbers said to be compoved one to another.

For Instances, 14 and 21 are Numbers compoved the one to the other, because they can both be Measured or Divided by 7. For 7 X 2 = 14, and 7 X 3 = 21, Therefore 7 is a common Measure to 14 and 21. So that if $\frac{14}{21}$ were proposed to be abbreviated it will become $\frac{2}{3}$.

Thus $\begin{cases} 7)14 = 2 \\ 7)21 = 3 \end{cases}$

And how those greatest common Measures may be found comes from Euclid 7. Prob. 1. 2. 3, and is thus.

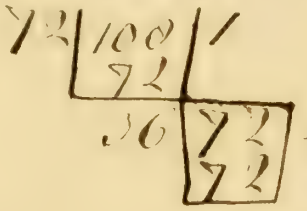
Rule

Divide the greater Number by the Lesser, and that Divisor by the Remainder (if there be any) and so on continually until there be no remainder left. Then that last Divisor be the greatest Common Measure. (And if it happen to be 1 then are those Numbers Prime Numbers, and are already in their Lowest Terms but if otherwise) Divide the Numbers by

Divisor, And their Quotient will be their least Terms required.

Example

Let it be required to find the greatest common Measure of 72 and 100, Viz. Of $\frac{72}{100}$?

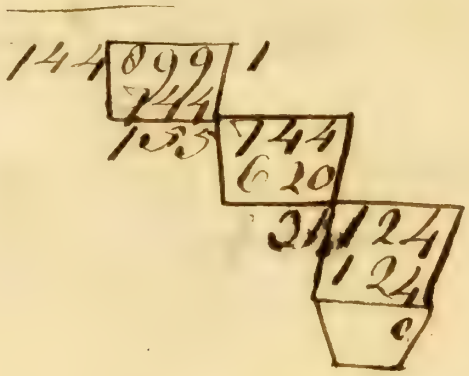


Here because there's no Remainder; 36 is the greatest common Measure.

$36)72 = 2$
$36)100 = 3$

Hence $\frac{72}{100}$ is Abbreviated to $\frac{2}{3}$ the lowest Terms.

Again, to find the greatest common Measure of 744 and 899?



Here 31 is found to be the greatest common Measure by which 744 and 899 may be Abbreviated to 24 and 29 their lowest Terms

That, $31)\frac{744}{899}\left(\frac{24}{29}\right.$ &c.

Note, If the proposed Numbers be even, they may be brought lower by a Continued Halving of them so long as they can be Halved, Viz. Divided by 2

Example

'Tis required to Reduce $\frac{56}{84}$ to its least Terms.

$\frac{56}{84} \frac{28}{42} \frac{14}{21}$ $\quad$ $\frac{14}{21} \div 7 = \frac{2}{3}$

If the Numbers proposed to be Reduced have each a Cypher, or Cyphers Annexed to them, they will be Abbreviated by cutting off a like Number of Cyphers from both.

Thus, $\frac{150}{300}$ will be $\frac{15}{30}$. And $\frac{200}{300}$ will be $\frac{2}{3}$ &c.

That is, $\frac{150}{300} = \frac{15}{30} = \frac{1}{2}$. And $\frac{200}{300} = \frac{2}{3}$. And $\frac{360}{400} = \frac{36}{40} = \frac{18}{20} = \frac{9}{10}$.

Sect. 3. Addition of Fractions.

What has been done by the Rule in this Chapter, is chiefly to prepare and fit Fractions of different Denominations for Addition or Subtraction, as Occasion requires, Viz. If they are Compound Fractions, they must be Reduced to Simple or Pure Fractions, per Rule, Sect. 1.

If they are of different Denominations, they must be altered or changed per Rule, Sect. 2.

That is, all Fractions must be brought into one Denomination before they can either be Added or Subtracted, and that being done, Addition is thus performed.

Rule

Add together all the Numerators, and their Sum will be a new Numerator, under which Subscribe the Common Denominator.

Examples in Simple Fractions

Let it be proposed to Add $\frac{1}{5}$ $\frac{2}{3}$ and $\frac{3}{4}$ together.

$\frac{1}{5} \times \frac{20}{20} = \frac{20}{60}$ $\frac{2}{3} \times \frac{12}{12} = \frac{24}{60}$ $\frac{3}{4} \times \frac{15}{15} = \frac{45}{60}$

Now $\frac{20}{60} + \frac{24}{60} + \frac{45}{60} = \frac{89}{60}$ Ans^{r} That is $89 \div 60 = 1\frac{29}{60}$ Ans^{r}

Examples in Compound Fractions

Let it be required to Add $\frac{3}{4}$ and $\frac{2}{3}$ of $\frac{3}{4}$ into one Sum?

First $\frac{2}{3}$ of $\frac{3}{4}$ becomes $\frac{6}{12}$ or $\frac{1}{2}$ per Sect. 11. And (per Sect. 2.) $\frac{3}{4}$ and $\frac{1}{2}$ is $\frac{6}{14}$ and $\frac{7}{14}$. Viz. $\frac{3}{4} = \frac{6}{14}$ and $\frac{1}{2} = \frac{7}{14}$ but $\frac{7}{14} + \frac{6}{14} = \frac{13}{14}$ the Sum required, viz $\frac{3}{4} + \frac{2}{3}$ of $\frac{3}{4} = \frac{13}{14}$.

Examples in Mix'd Numbers.

It is required to add $5\frac{2}{3}$ to $7\frac{3}{4}$. $13\frac{5}{12}$ Ans^{r}

$5 \times 3 + 2 = \frac{17}{3}$ $7 \times 4 + 3 = \frac{31}{4}$

$\frac{17}{3} \times \frac{4}{4} = \frac{68}{12}$ $\frac{31}{4} \times \frac{3}{3} = \frac{93}{12}$

$\frac{68}{93}$
$\frac{161}{12}$

12 | 161 | 13. $\frac{5}{12}$ Ans^{r}
12 | 11
36
5

Sect. 6. Substraction of Fractions.

Rule { Substract one Numerator from the other (according as the Question requires) and the Difference will be a new Numerator, under which subscribe the common Denominator, as in Addition.

Example 1.

Let it be required to take $\frac{2}{9}$ out of $\frac{3}{7}$.

$\frac{2}{9} \times \frac{7}{7} = \frac{14}{63}$ $\frac{3}{7} \times \frac{9}{9} = \frac{27}{63}$ $\frac{27}{14}$ $\frac{13}{63}$ Ans^{r}

13
63

Example 2.

Let it be required to subtract $\frac{2}{3}$ of $\frac{8}{9}$ from $\frac{13}{14}$

$2 \times 8 = 16$. $3 \times 9 = 27$. $\frac{16}{27} \times \frac{14}{14} = \frac{224}{378}$. $\frac{13}{14} \times \frac{27}{27} = \frac{351}{378}$

351
224
127
378

$\frac{127}{378}$ Ans^{r}

Example 3.

From $6\frac{1}{8}$ Subtract $3\frac{19}{40}$.

$3 \times 40 + 19 = \frac{163}{40}$ $6 \times 8 + 1 = \frac{49}{8}$. $\frac{163}{40}$

$\frac{49}{8} \times \frac{6}{6} = \frac{294}{48}$ 294
163
131
40

40 | 131 | 2. $\frac{36}{40}$ Ans^{r}
96
35

Example 4.

Let it be required to Subtract $\frac{3}{7}$ of $\frac{5}{9}$ of $\frac{2}{3}$ from 1.

$3 \times 5 \times 2 = 30$. $7 \times 9 \times 3 = \frac{30}{189}$. $\frac{30}{189}$ $6.\frac{189}{189}$.

189
30
159
189

$6.\frac{159}{189}$ Ans^{r}

If these few Examples be well understood, the whole Business of Adding & Subtracting Vulgar Fractions will be easy; which is really much more difficult to perform than either Multiplication or Division, as will appear in the next Section.

Signs made use of in Arithmetic.

Signs	Names	Significations
+	Plus or more.	The Sign of Addition; As 8+7 is 8 more 7, and signifies that the Numbers 8 and 7 are to be added into one Sum. the like is to be understood when several Numbers are connected together with the sign+ As 84+22+9+4.5, &c, denotes these are all to be added into one Sum.
−	Minus or less.	The Sign of Subtraction; As 9−6 is 9 less 6, and signifies that 6 is to be taken from 9 that so their Difference may be found.
×	Into, or with.	The Sign of Multiplication, as 9×6 is 9 into 6, and signifies that 9 is to be Multiplied into or with 6.
÷	By	The Sign of Division; as 8÷2, is 8 by 2, and signifies to 8 is to be Divided by 2, as so thus 2)8(4 or thus $\frac{8}{2}$ each signifying the same thing, to wit 8 Divided by 2.
=	Equal.	The Sign of Equality or Equation, Viz. whenever this Sign = is placed betwixt Numbers (or Quantities) it denotes them to be equal 9=9 or 9×6 =15 or 9−6=3, &c. That is, 9 is equal to 9, or 9 more 6 is equal to 15, and 9 less 6 is equal to 3, &c.
::	So is.	The Sign of Proportion, or that commonly called the Golden Rule, or Rule of Three and :: is always placed betwixt the two middle Terms or Numbers in Proportion. Thus, 2 : 8 :: 6 : 24. To be read thus; as 2 is to 8, so is 6. To 24.

These Signs and their Significations, being perfectly learnt will help to shorten the work.

Sect. 7. Multiplication of Fractions.

In order to perform either Multiplication or Division, you must prepare the Terms to be Multiplied (or Divided) thus; Reduce Compound Fractions to Simple Ones, per Sect. 1. Bring mixed Numbers into improper Fractions. Or express whole Numbers Fractionwise, per Sect. 6. Also it will be convenient to Abbreviate them to their smallest Terms when it can be done then Multiplication may be then performed.

Rule { Multiply the Numerators one into another for a New Numerator; and the Denominators one into another for a new Denominator. So in these.

Examples

1. The Product of $\frac{2}{3}$ into $\frac{3}{7} = \frac{6}{05}$.

$\frac{2}{3} \times \frac{3}{7} = \frac{6}{05}$ Ans^{r}

2. And the Product of $\frac{9}{16}$ into $\frac{20}{27}$.

$\frac{9}{16} \times \frac{20}{27} = \frac{180}{432}$ Ans^{r}

3. Again the Product of $\frac{7}{11}$ into $\frac{2}{5}$ of $\frac{5}{7}$.

$\frac{7}{11} \times \frac{2}{5} \times \frac{5}{7} = \frac{70}{685}$ Ans^{r}

4. Let it be required to Multiply 6 with $0\frac{2}{5}$.

$0 \times 0 + 2 = \frac{17}{5}$ $\frac{6}{1} \times \frac{17}{5} = \frac{102}{5}$ $\boxed{\frac{102}{10}}$ $20\frac{2}{5}$ Ans^{r}

5. Let it be required to Multiply $7\frac{4}{9}$ with $5\frac{7}{13}$.

$7 \times 9 + 4 = \frac{67}{9}$. $5 \times 7 + 3 = \frac{38}{7}$. $\frac{67}{9} \times \frac{38}{7} = \frac{2546}{63}$ $63)2546(40\frac{26}{63}$

252

26

Sect 8. Division of Fractions.

The Fractions being first prepared as before direct Division may be thus performed.

Rule { Multiply the Numerator of the Dividend into the Denominator of the Dividing Fraction a New Numerator: And Multiply the other Numerator & Denominator together for a new Denom

Examples.

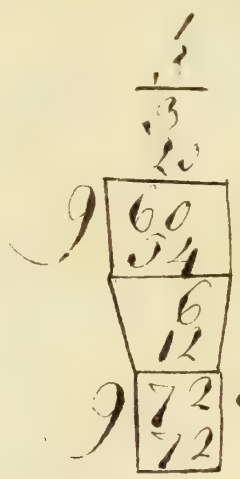
1. Let $\frac{6}{35}$ be divided by $\frac{3}{7}$.

$35 \times 3 = 105.$ $7 \times 6 = 42.$ $\frac{6}{35} \div \frac{21}{21}$ $\frac{42}{105} \div \frac{21}{21} = \frac{2}{5}.$

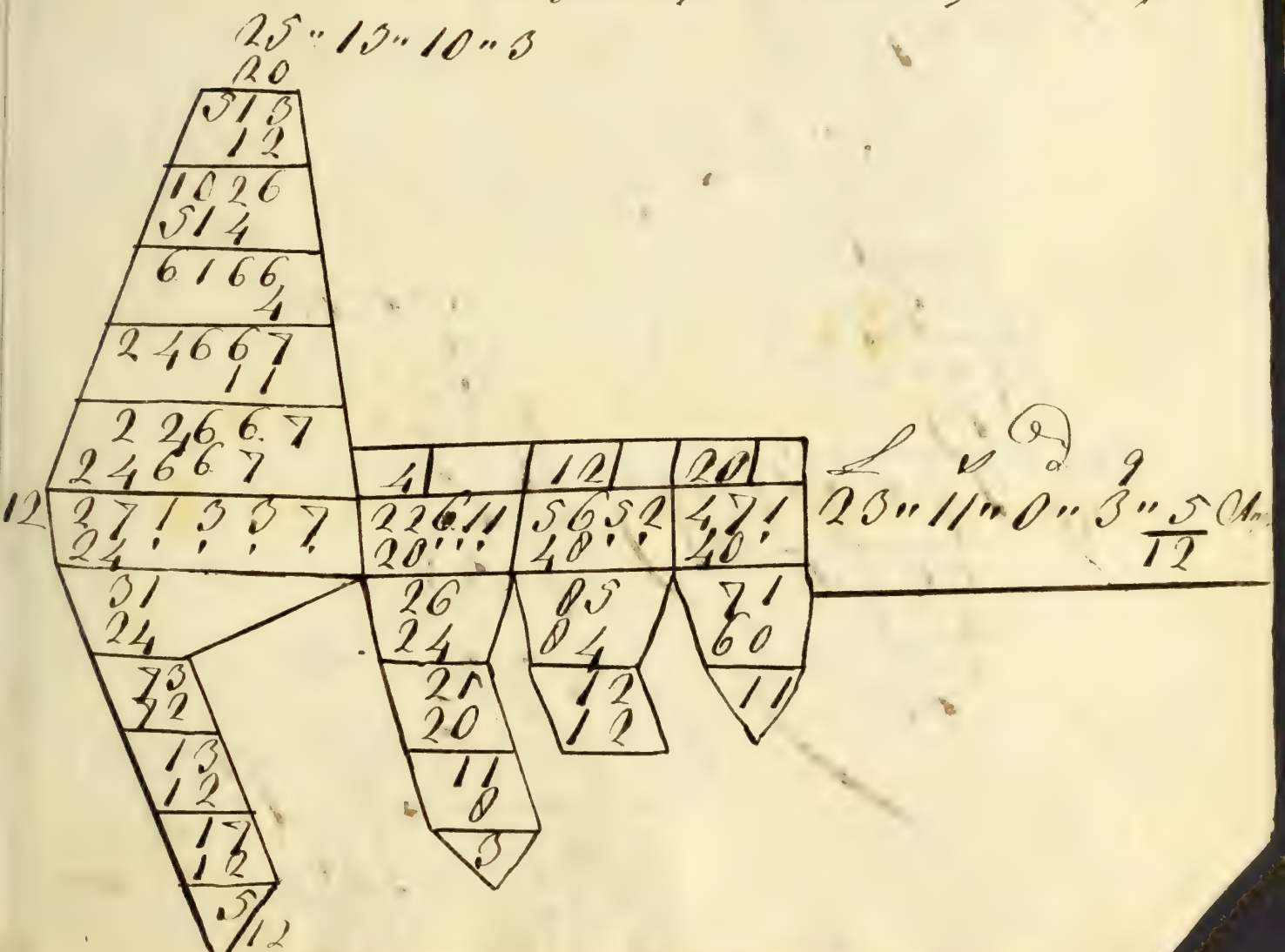
Valuation of Vulgar Fractions.

Rule, Multiply the Integer of which the Fraction is a part, by the Numerator of the Fraction; and divide that Product by the Denominator; and the Quotient will be the Answer sought.

Exp. What is the Value of 3/4 of a Pound? Ans.

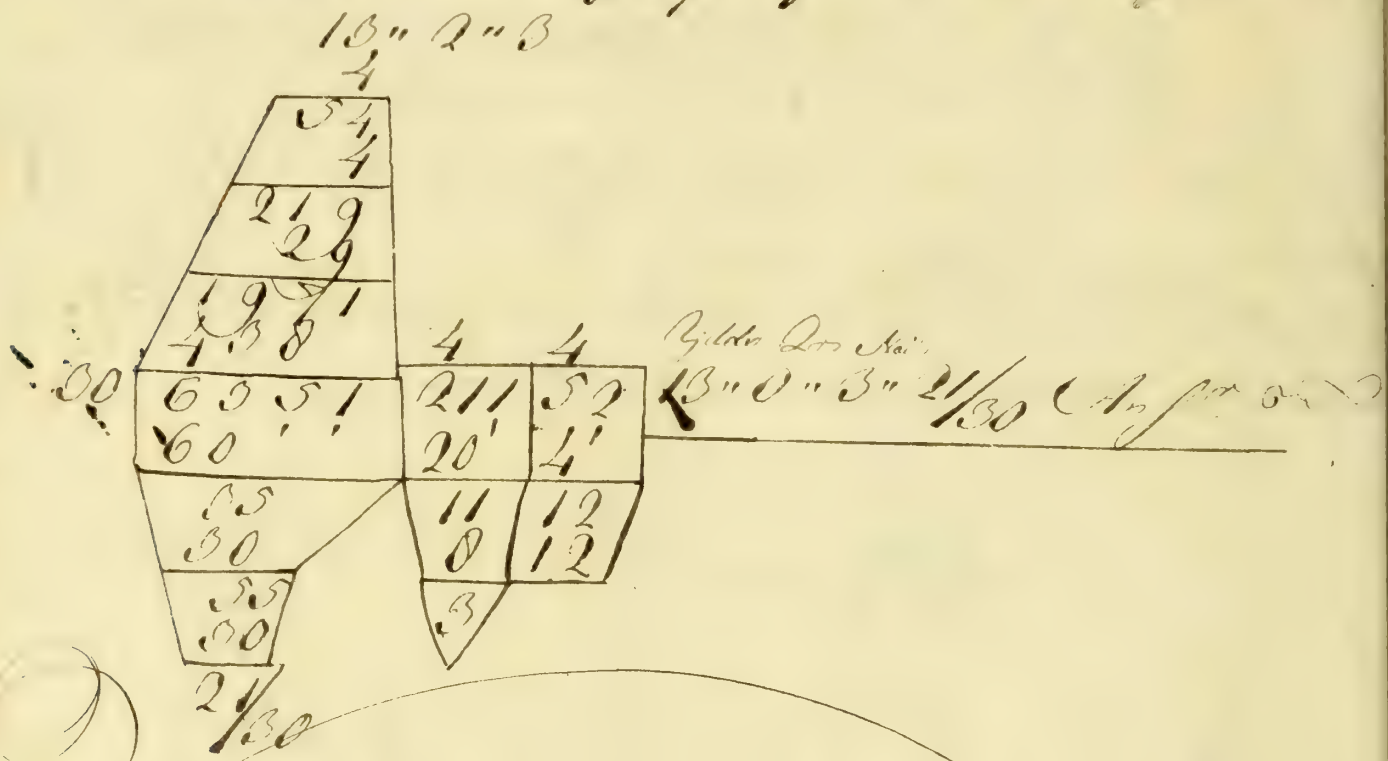


What is the Value of 11/20 of 25 l. 13 s. 10 d. 3/4 ?



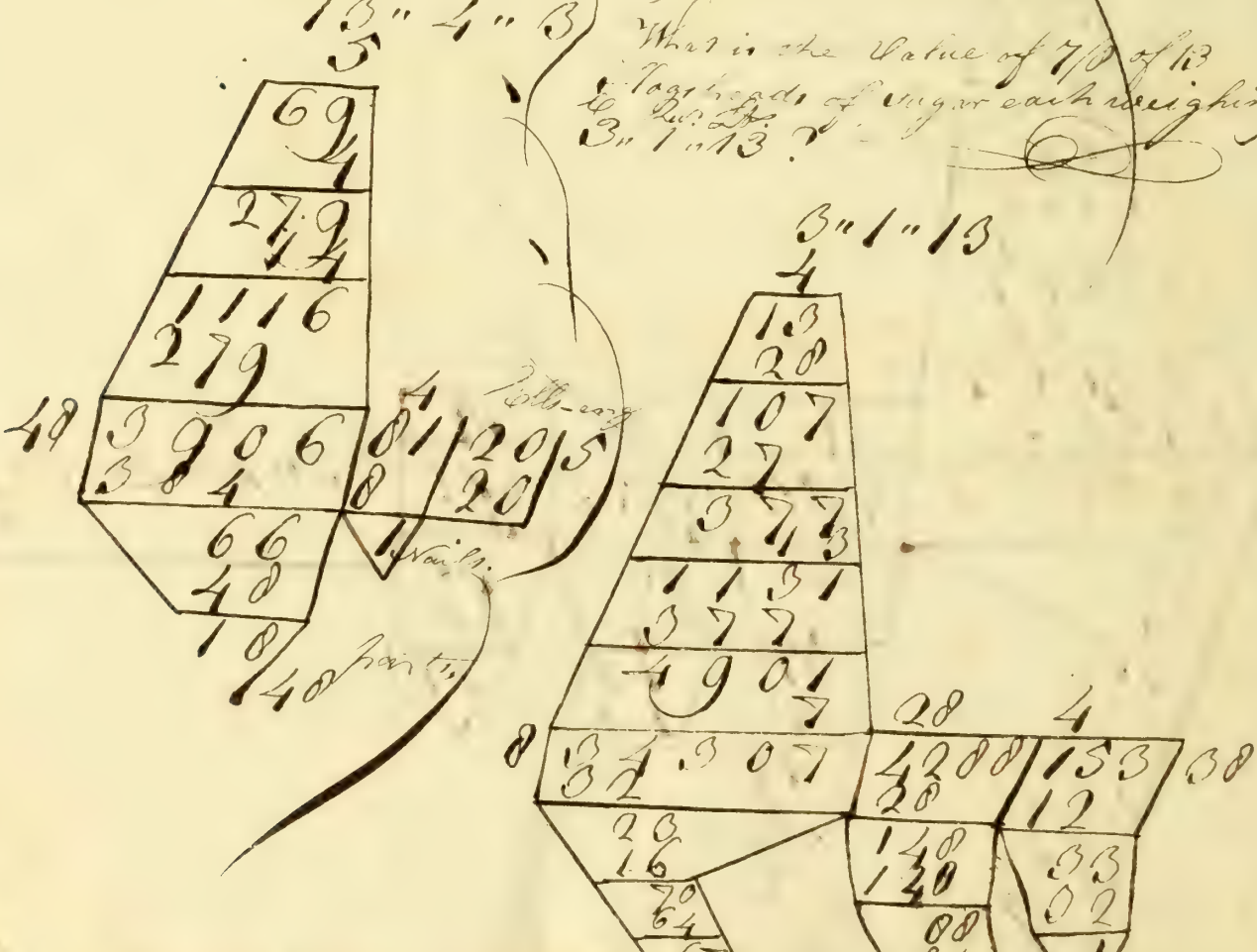
Valuation of Vulgar Fractions.

What is the Value of 29/30 of 13 " 2 " 3 — of Cloth?



What is the Value of 1/2 of 2/3 of 7/8 of 13 " 4 — 3 oz Ells Eng Qrs Nails Holland

1 × 2 × 7 = 14 2 × 3 × 8 = 48



The Rule of Three in Vulg: Fractions.

If 6/12 of 1 Yds: 2 qrs: 1 nail of Broad Cloth cost £190 : 15 : 4; what is 10/15 of the same Cloth worth?

£190 : 15 : 4
20

3973	
12	
79 50	
39 13	
47600	
240	

$\frac{6}{12} = \frac{3}{6} \div \frac{3}{3} = \frac{1}{2}$ $\qquad \frac{10}{15} \div \frac{5}{5} = \frac{2}{3}$

$\frac{1}{2} \quad \frac{47600}{240} \quad \frac{2}{3}$

$\frac{47600 \times 2}{240 \times 3} = \frac{95360 \times 1}{720 \times 2} = \frac{190720}{720}$

£ s d

720	190720	264 : 17 : 9 : 1 Ans:
	1440	
	4672	
	4320	
	3520	
	2880	
	640	
	20	
720	12800	17
	720	
	5600	
	5040	
	560	
	12	
720	6720	9
	6480	
	240	
720	1360	1
	720	
	640	

Decimal Fractions.

Notation & Definition

Decimal Fractions are Artificially expressed by writing down the Numerator only, the Denominator being Understood and are always an Unit, with as many Ciphers Annexed as there are Places in the Numerator & therefore may be with 10, or some Power of Ten as 100, 1000, 10,000, 100000. &c.

Decimal Fractions are distinguished from whole Numbers a Point or Comma prefixed thus, & being Five tenths ,5 is Thirty Two Hundredths ,32 is Two Hundred & 56 Thousandths Parts of the Integer and as in whole Numbers Ciphers Annexed to the right hand Increase the value in a tenfold proportion, yet in Decimals Ciphers annexed to the right Hand are of no significa tion at all; for, ,5, ,50, ,500, ,5000, ,50000, are all the same Fraction being only, 5 or five Tenths of an Integer — And whereas in whole Numbers the order of Places proceed, from the Right Hand to the Left, yet in Decimals the order of Places is wholly Inverted as may be seen by the following Scheme —

						Parts	
						=	
&c	Thousands	Hundreds	Tens	Units	Tenths	Hundredths	Thousandths

,8 7 6 5 4 3 2 1 , 1 2 3 4 5 6 &c

Addition of Decimal Fractions.

Place the Integers & Fractions in their Order (ie) Units under Units and Tenths under Tenths &c. — and proceed to Add them in all respects as if they were Integers —

Add 35 87,6143 9. ,0003.000000. ,5
39847 ,38. 40,0007. ,50 ,39876 —

35
87,6143 9
0003
000000
5
39847,38
40 ,0007
50
39876

40019,74143 8

Add 749,007. 38 ,78. 387643,9. ,0004
,5 39,871. — 64 — 37,640798 —

749,007
38,78
387643,9
,0004
,5
39,871
64
37,640798

388573,706038

Subtraction of Decimal Fractions.

Place the Sum as was Directed in Addition, and Subtr
them as if they were Integers ——

From 48. Subtract 3,07643.

$$\begin{array}{r} 48 \\ 3,07643 \\ \hline 44,12357 \end{array}$$

From 406,98 take 20,007067 ——

$$\begin{array}{r} 406,98 \\ 20,007067 \\ \hline 386,972133 \end{array}$$

From 490. take 240,790016 ——

$$\begin{array}{r} 490 \\ 240,790016 \\ \hline 249,209984 \end{array}$$

Multiplication of Decimal Fractions

Multiply the Sum in all respects as if they were whole Numbers, and for the true Product, Point off as many places for Decimals in the product, as there are Decimal places in both the Factors Accounted together—

Multiply 487,3981 by 38,798—

487,3981
38,798

38991848
43863829
34117067
38991848
14621943
18910,071 4838

Multiply 486,004 by ,0000

486,004
,0000
,0000000

Multiply ,00070 by ,0007

,00070
0007
,000000546

38,64976
08,4087
270542832
3091991008
154599504 0
309191008
11594628 0
1494,56924 4912

Division of Decimal Fractions.

Division of Decimals is performed as if they were Integers but the Difficulty lies in Determining what Number of Decimals the Quotient shall consist of And here observe that the Decimal Places in the Divisor and Quotient should always be equal to the Decimal Places in the Dividend and from this General Rule there arises the three following Cases (viz.)

Case (1) When the Decimal Places in the Dividend are not so many as those in the Divisor, then before you begin the work annex so many Ciphers to the Dividend (accounting them for Decimals) as make them equal to the Divisor then will your quotient be the whole Number.

Case (2) When the Decimal Places in the Divisor & in the Dividend are equal then will the Quotient be Integers

Case (3) If after your Division is finished, you find that you have not so many Places of Decimals in the Quotient as you Ought to have by the General Rule: Then you must prefix so many Ciphers before the Quotient as will make up their Deficiency

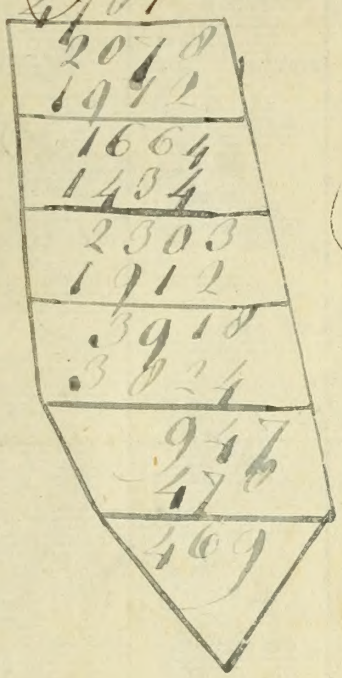
Exp.ls

Divide 39. by 8,6743

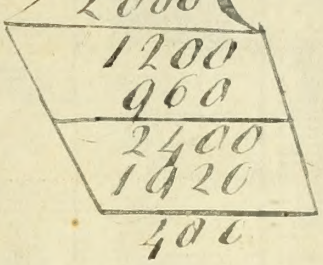
8,6743) 39,0000 (4,4971

Division of Decimal Fractions

47,8) 4987843907 (10434101



960) 3000 (00312



Taber finding that he could get no Satisfaction in a legal Way, takes the Liberties to acquaint the Publick with the Treatment that he met with at the Boston-Neck Guard, by the Officer of the Guard Lieut. Williams Co-boy, of the 23d Regiment. And he does it as a Token of the many Insults, Abuses and Wrongs, that he understands have been daily offered to others.

On the 12th of this Instant, driving his Waggon out of Town, which was not loaded with any contraband Goods, he was, contrary to all Law, stop'd and detain'd by the above Officer, near two Hours with his Waggon putting aforesaid Officer, near two Hours with his Waggon putting him under Guard, using him with rough and very indecent Language, and not suffering him to go out to give any Thing to his Cattle! some of the Soldiers at the same Time taking a Keg of Rum out of his Cart, which he was obliged to consent to their doing after they had propos'd it, to prevent greater Abuse and Wrong, &c. And when set at Liberty by the Officer of the Guard, demanding Satisfaction for this cruel Treatment, all the Satisfaction that he could get, was, That if he did not go about his Business, he would put him under Guard again. difinish.

JONAS WILDER, of Lancaster.

Boston, August 13, 1774.

New-York, July 27, 1774.

Fifty Pounds Reward.

WHEREAS on the 19th of June last past a certain JOSEPH THORP as entrusted at New-York with a considerable Sum of money in Half Johannes, of nine penny weight, to be delivered by him at Quebec, and as he has not yet made his appearance there, with other suspicious circumstances, it is apprehended he is gone off with the money. He is a native of England, about 35 Years of Age, six feet high, swarthy complexion, very dark keen eyes, with pimples in his face, and pitted with the small pox, of a slender make, stoops as he walks, talks rather slow, with some small impediment in his speech, wears a wig and is very fond of smoaking. He lived some time in Boston, from whence he removed to Quebec, assuming the character of a merchant in both places; he was also once in trade in New Castle, Virginia, and has a brother settled there. He went on board Captain John F. Pruym, for Albany, and landed at Poughkeepsie, from whence he hired a waggon to carry him to New-Haven.—He took with him a blue camlamir and dark brown suit of cloaths.

Whoever secures the said JOSEPH THORP in any of his Majesty's goals on this continent, shall be entitled to ten per cent. on the sum recovered, and the above reward of Fifty Pounds when convicted. Apply to Curson and Seton of New-York, Joseph Wharton, jun. of Philadelphia, Robert Christie, of Baltimore, James Gibson and Co. Virginia, John Bondfield of Quebec, or Melatiah Bourne of Boston. It is requested of those who may have seen this Joseph Thorp, since the 19th of June last past, or know any Thing of the Rout he has taken, that they convey the most early Intelligence thereof to any of the above persons, which will be gratefully acknowledged.

All Masters of Vessels are forewarned from taking him off the Continent.

TO BE SOLD.

A Tract of Land at a Place called *Deer-Island*, in *Penobscot Bay*, containing Six or Seven Hundred Acres, with a Dwelling House, Corn-Mill, Saw-Mill and a Wharff thereon, the Estate of Capt. *Nathaniel Kent*, late of *Glocester*, deceased. For Particulars, enquire of *Sarah Kent*, Executor of said Estate.

Glocester, 11th August 1774.

Next Thursday Evening,

TO BE SOLD,

By *BENJAMIN CHURCH*, &c.

At his usual Place of Sale,

CLOTH Cambletts—Camlancees—Calicoes—Linnens—Checks—Muslins—Hard Ware, as Case Knives and Forks—Penknives—Shoe Buckles—Buttons—House Furniture, viz. Feather Beds, Tables, Desks, an 8 Day Clock, Watches, &c. &c.

N. B. A good Chaise and Harness.

THURSDAY EVENING.

All Persons who have any Demands on the Estate of Benjamin Chamberlain Bunker, *late of* Charlestown, *Innholder, deceased, are desired to bring in their Accounts immediately to* Hannah Bunker, *Widow, sole Executrix to said Estate: And all Persons indebted to said Estate, are desired to make Payment to said Administratrix as soon as possible, in Order for a speedy Settlement of said Estate.*

New AUCTION-ROOM, Cornhill,

TO MORROW MORNING, at TEN o'Clock,

Will be Sold by PUBLIC VENDUE,

At GREENLEAF's Auction-Room,

A Variety of Goods as usual, two good Feather Beds.

W. GREENLEAF, Auctioneer.

The Sale will begin at Ten o'Clock precisely.

NOTICE is again given, That the Commissioners appointed by the Hon. Foster Hutchinson, Esq; Judge of Probate for the County of Suffolk, to examine the Claims to the Estate of Capt. SAMUEL SNOW, late of Boston, deceased, represented Insolvent, will continue to attend that Service at the British Coffee House, the second Tuesday in the three next ensuing Months, being the three last Months allowed for that Purpose, from 6 to 8 o'Clock in the Evening; that no Person may plead their not having suitable Notice of it.

BOSTON, Aug. 13, 1774. JOB PRINCE, JOHN CARNES.

[illegible] Estate of [illegible] all Persons [illegible] John [illegible]

[illegible] Province [illegible] been [illegible] a Birth *mutilated* [illegible] the Hand [illegible] Power, without the least Form of LAW [illegible] or would it be [illegible] ing of the same Power, in the Career of its present Extension, shall impudently proceed to *lop the most vital Part* of it, by declaring our lower House of Assembly *totally inconvenient*, by wanting *essential Re-forms*; more especially, as such an Aim of Assassination stands fair to find SECONDS among ourselves, to *this Day*, when some of the very Sons of the Massachusetts dare impiously stand forth SWORN ENEMIES to its ancient Constitution.

The inclosed Extracts of a Letter from London, may serve to elucidate the *ungenerous* Principles now prevailing among those who expect us to look up to *them*, as the hereditary Moulders of *our* Rights and Privileges? And your Publication of them may confirm the spirited Colonists in a vigorous Claim and Support of those Forms of Government *in which Election they have had a Voice*, and which they have *experienced* to be good.

Your's, J. L.

"GENTLEMEN, *Inner-Temple, March* 19 1774.

"I have presented the Papers you have done me the Honor of transmitting to me, concerning your desire of having an House of Assembly in the Province of Quebec to my Lord Dartmouth, and have waited upon his Lordship at his Levee since I did so; but his Lordship has not informed me of the Sentiments of himself, or any other of his Majesty's Ministers of State concerning your Request; so that I cannot yet transmit to you any Information upon that Subject. But I conjecture that his Majesty's Servants are of Opinion that the State of the Province is not yet quite ripe for the Establishment of an Assembly, and that they rather incline for the present to supply the want of one by establishing a Legislative Council, nominated by the King, with sufficient Powers to do the necessary Business of the Province, 'till the more natural and constitutional Measure of a General Assembly shall appear to them more practicable.—In order to facilitate the Attainment of your Wishes, I here beg Leave to hint to you, that I believe it would greatly contribute to that End, if you would previously declare that you conceive the British Parliament to have a compleat Legislative Authority over the Province of Quebec, and that such Authority will continue after the Establishment of an Assembly; and that you and the other Petitioners are willing that every Member of such future Assembly should be required to recognize the said supreme Authority in every Article whatsoever, both of Legislation and Taxation, in the plainest and strongest Terms, before he is permitted to take his Seat. Such a previous Declaration would greatly tend to remove the Prejudices now subsisting in the Minds of many People in England against the Erection of new Houses of Assembly in America.—I know nothing that would contribute more to your obtaining an Assembly, than your making a Declaration of this Kind. I hope soon to wait on Lord Dartmouth again, and to hear from his Lordship the King's Answer to your Petition; and when I have received it, I will transmit it to you without Delay.

I remain, &c.

To the Committee of the Petitioners for an Assembly in the Province of Quebec."

To be sold on very reasonable Terms,

The Hull of a double-deck'd Brigantine about 146 Tons Burthen, now launched in Taunton-River. Farther enquire of ABIEL SMITH, nearly opposite to the Head of Orange-Tree Lane, Boston, or Mr. JOB SMITH, at Taunton.

For private Sale,

At the New-Auction-Room South Side of the Town-House,

A very great Variety of House and other Furniture.—The Particulars in our next.

WHEREAS the Committee for managing the Prudentials of the Proprietors of New Boston, in New-Hampshire, have received a Request from Ten of the said Proprietors to call a Meeting of said Proprietors for the following Purposes, viz.—To chuse a Proprietor's Clerk, the former Clerk being dead.—To chuse a Committee to defend or carry on any Law-Suits that is or may be brot against them, or to sue any Person or Persons that may be Trespassers on any of their Lands in said Town.—And as two of the Standing Committee are dead, to chuse two in their Room; or to chuse a new Standing Committee, as the said Proprietors shall think proper.—And to know if the said Proprietors will direct the said Committee to sell any of their undivided Land.

The said Proprietors are hereby notified to meet at the House of Thomas Harwood's, in Dunstable, on Tuesday the 13th Day of September, 1774, at Ten o'Clock in the Forenoon.

The Proprietors of *Silvester* Town, lying on Androscoggin-River, in the County of Cumberland, are hereby again notified that said Proprietors, at their Meeting legally held by Adjournment, on the 7th Day of October, 1772, voted a Tax of 30s. on a Right, to be paid to Mr. Charles Turner, Proprietor's Treasurer, on or before the 15th Day of March, 1773, and on the 10th Day of May 1774, voted a further Tax of 20s. on a Right, to be paid to the Treasurer aforesaid, on or before the 10th Day of September, 1774: And whereas many of the said Proprietors are delinquent in paying the former of said Taxes;—therefore unless said Taxes shall be paid to the Treasurer aforesaid, on or before the 25th Day of October, 1774; so much of said delinquent Proprietors Lands will be sold at public Sale on said Day, as shall be sufficient to pay said Taxes, and all necessary Charge, at the House of Mr. Daniel Baker, Innholder in Pembroke, at Three o'Clock, P. M. Said Vendue to be adjourned if Occa[illegible]

For Order of the [illegible]

[illegible] Malden, August 16, 1774. ISAAC [illegible]

To be sold by PUBLIC AUCTION On THURSDAY the 18th Current, at Three o'Clock in the [illegible]

Two Chaise, with Harness [illegible] pleat, 3 good Horses, Saddles, &c. Also a House Furniture, consisting of Mahogany [illegible] tom Chairs, round about ditto, one very [illegible] Hair Bottom Close-stool Chairs, two easy [illegible] some Scrutoir, Mahogany-Sett Tables, [illegible] tains, Bedding with [illegible] Tea [illegible] dry other Articles. Enquire of JACOB [illegible] near the King's Chapel, who has the Disp[illegible]

N. B. The above Articles may be [illegible] of the late Mr. *Richard Silcomb*, Baker, [illegible] the Sale. MOSES DESHON.

Mr. Daniel Bell,

At his Store near the [illegible] Head of Fo[illegible] Hay[illegible]

A small Quantity of good [illegible] Hogsheads or Barrels, very cheap [illegible] Cash.

TO BE SOLD

A Very handsome Chaise [illegible] ness compleat, and a [illegible] Seat to be used occasionally.

A Pair of young Bay Hor[illegible] to the Carriage; And,

A fine riding Horse [illegible] high, half Blood, and abo[illegible] old. Enquire of Ed[illegible]

Province of the Massachusetts Bay.

To the Hon[illegible]

Dexter, *Esq; one of his Majesty's Jus[illegible] through the said Province*

We the Subscribers, Proprietors [illegible] Township, granted by the Gen[illegible] the Province aforesaid, at the rese[illegible] to *John Gardner*, and others, in [illegible] Number Six in the Line of Towns [illegible] and *Merrimack*-Rivers, so called by the [illegible] *New-Hampshire*—request you [illegible] ing of said Proprietors to be [illegible] of *August* next, at the House [illegible] Innholder in *Stow*, at Ten [illegible] noon, then and there to choose [illegible] Meeting, also to chuse a Prop[illegible] and any other Proprietary Offic[illegible] or Sums of Money, as per [illegible] Debts already due from [illegible] any future Demands; to [illegible] calling Proprietors Meetings [illegible] agree on some Method for lay[illegible] into Lots, and to do any other [illegible] ing forward the Settlement of [illegible]

Stow, June 15, 1774.

SEAL *Province of [illegible]*

To Henry [illegible] in the County of [illegible] the principal [illegible] aforementioned

In pursuance of the [illegible] and Request [illegible] Time & Manner [illegible] of the Town [illegible] and Place, and for the [illegible] written Petition. Given [illegible] this fifth Day of *July*, [illegible] Fourteenth Year of his [illegible]

SAMUEL DEX[illegible]

through the Province [illegible]

By Virtue of the above [illegible] The Proprietors above-mentioned [illegible] at Time and Place above-[illegible] aforesaid.

Custom-House, Port of Sal[illegible]

Entered In, *Decker & Co[illegible] and Waters from St. Nicholas [illegible] from St. Lucia. Bates [illegible] and Thompson from Que[illegible] Rolland from Falmouth. [illegible] Furbeck from Jamaica.*

Outward Bound. [illegible] *Philadelphia. Ashby [illegible] for West-Indies [illegible]*

Burials in the [illegible]